

June 2, 1925.

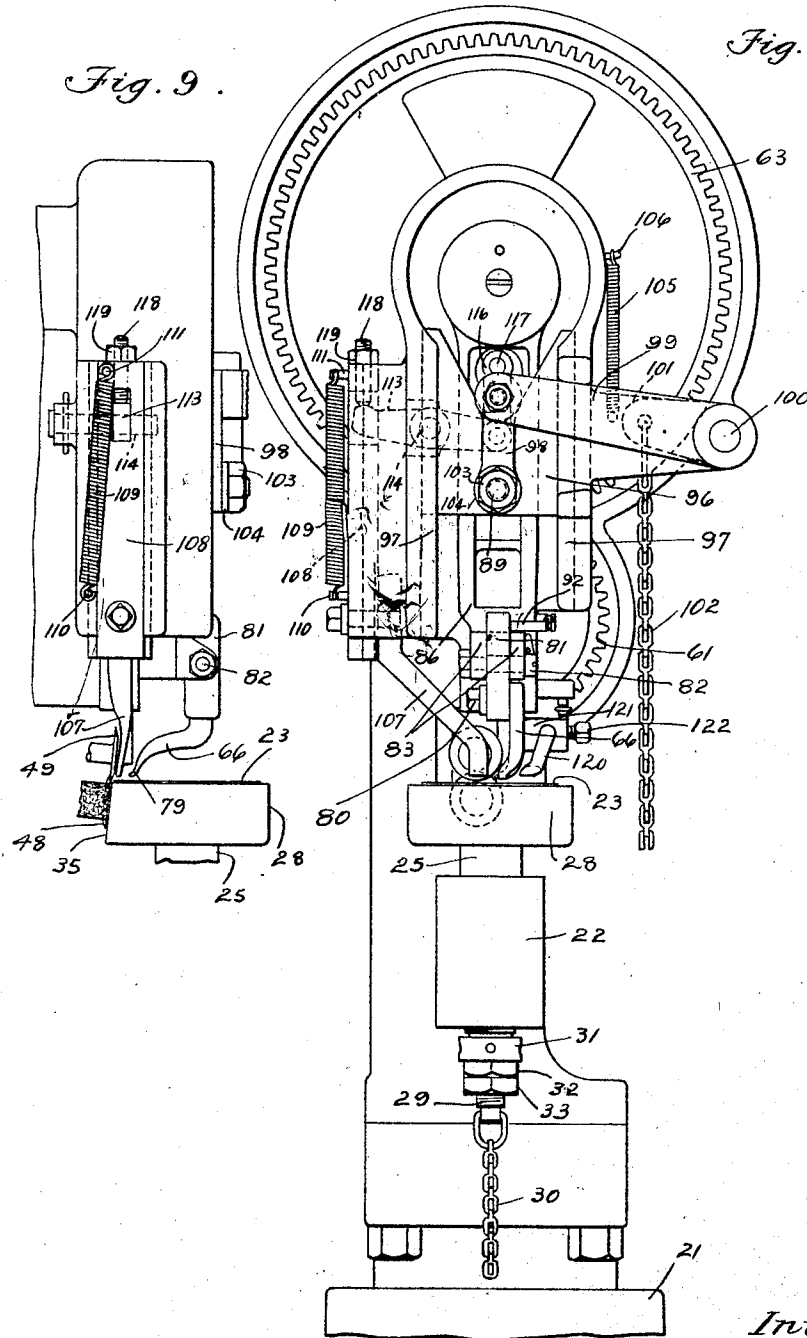
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MACHINE FOR TUCKING AND TRIMMING FABRIC COVERED INNERSOLES

Filed March 8, 1921

6 Sheets-Sheet 1



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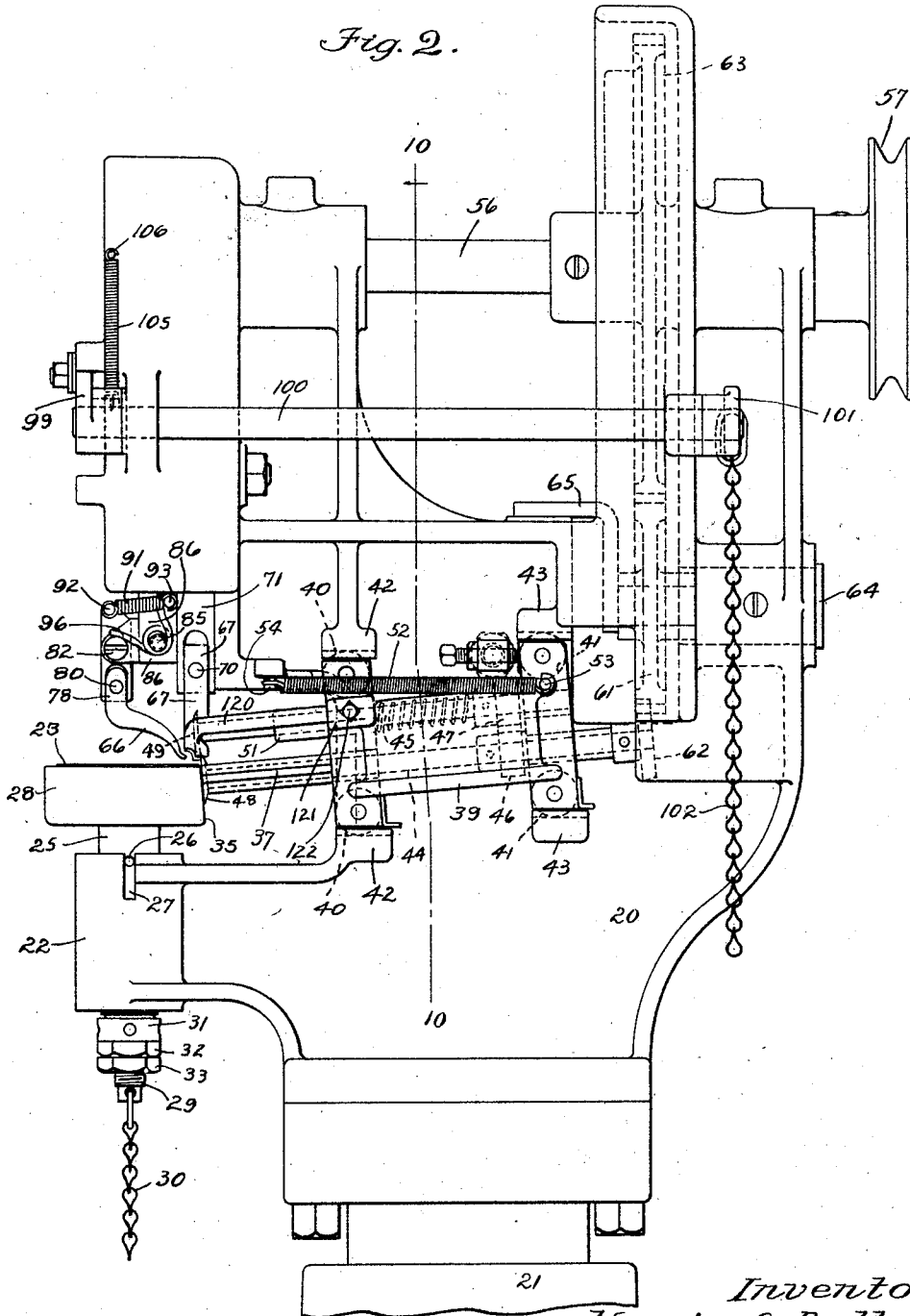
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MACHINE FOR TUCKING AND TRIMMING FABRIC COVERED INNERSOLES

Filed March 8, 1921

6 Sheets-Sheet 2

Fig. 2.



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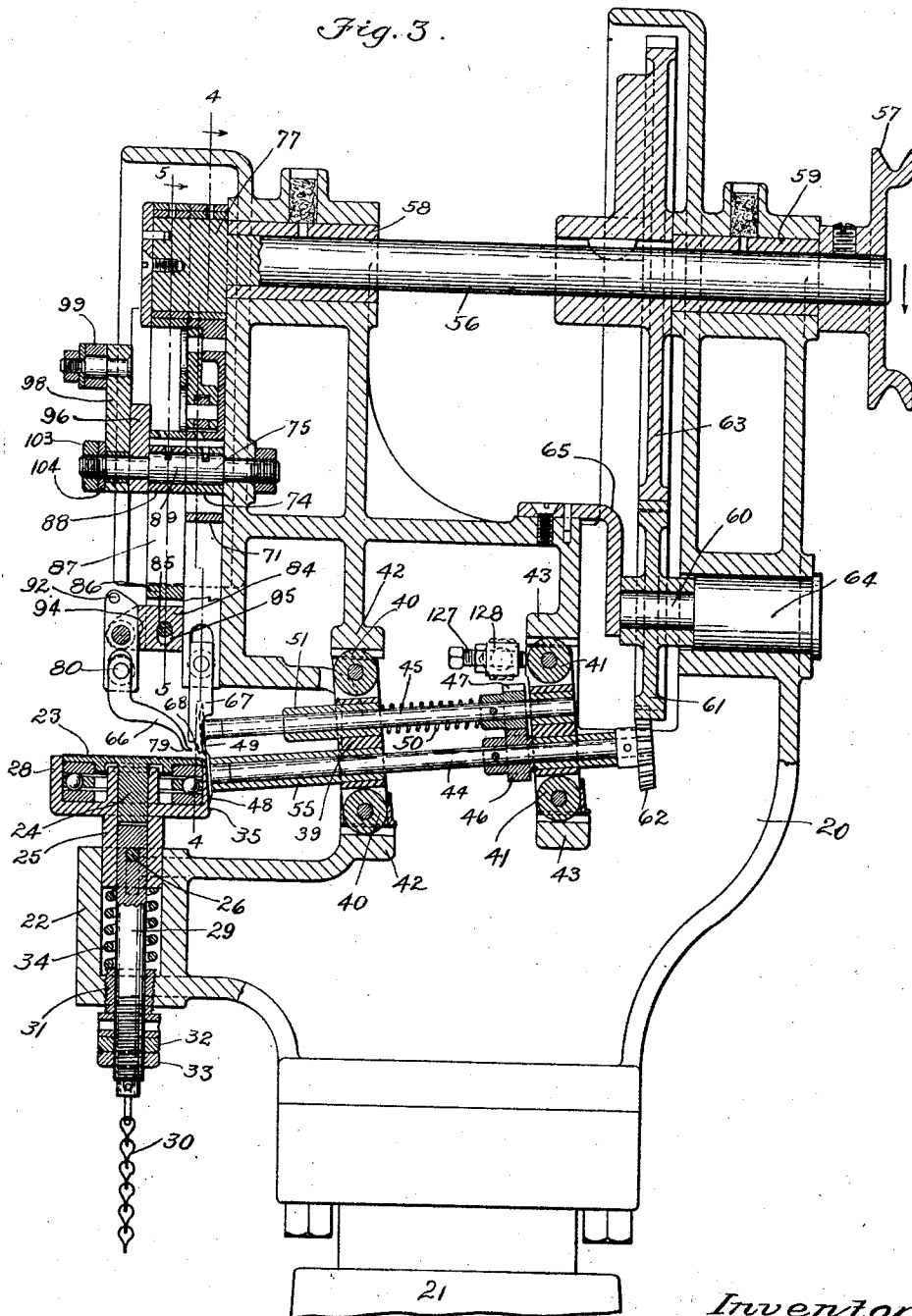
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Filed March 8, 1921

6 Sheets-Sheet 3

Fig. 3.



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MACHINE FOR TUCKING AND TRIMMING FABRIC COVERED INNERSOLES

Filed March 8, 1921

6 Sheets-Sheet 4

Fig. 4.

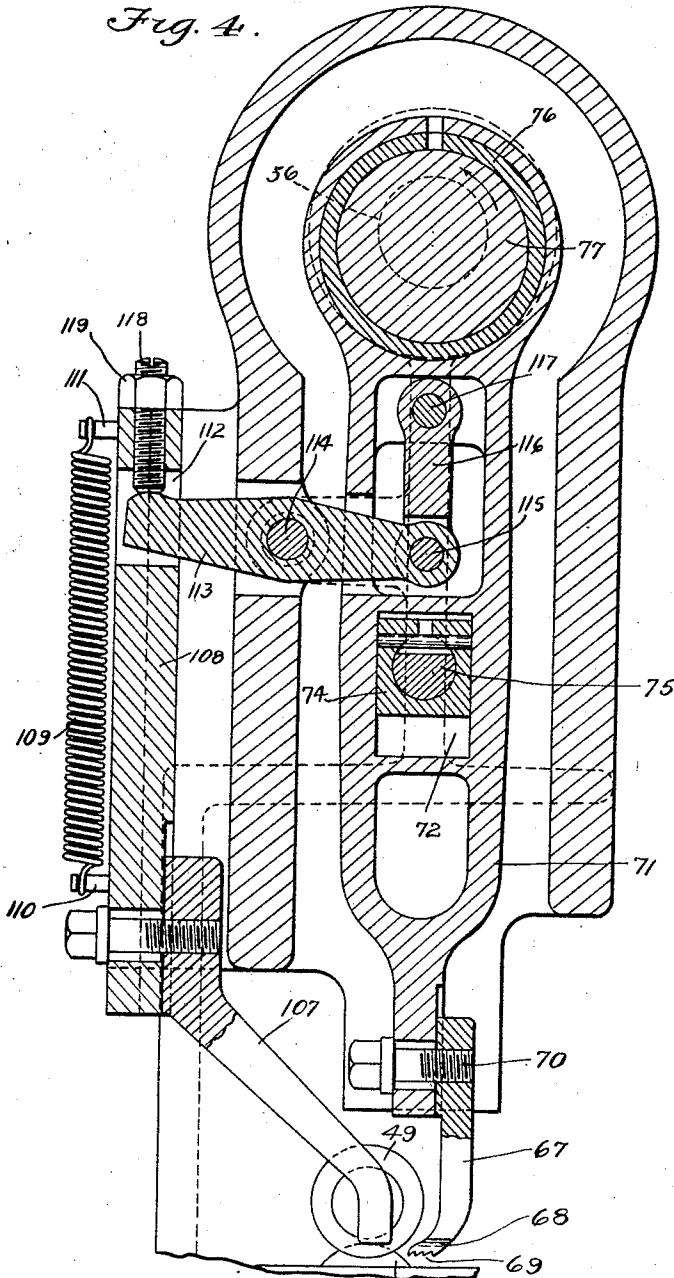


Fig. 5.

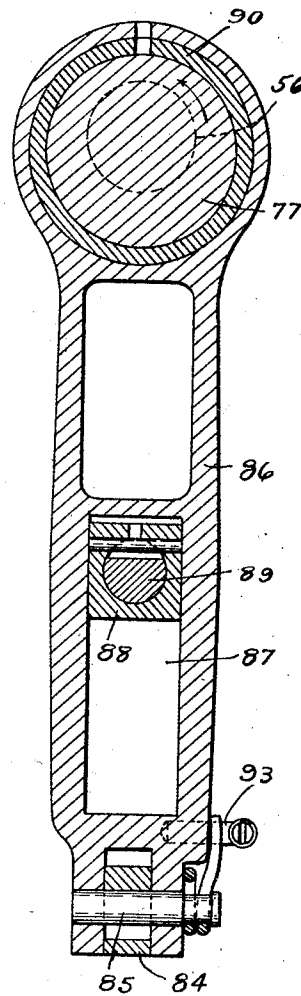
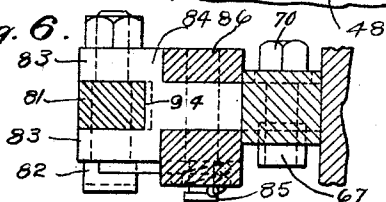


Fig. 6.



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Fig. 8.

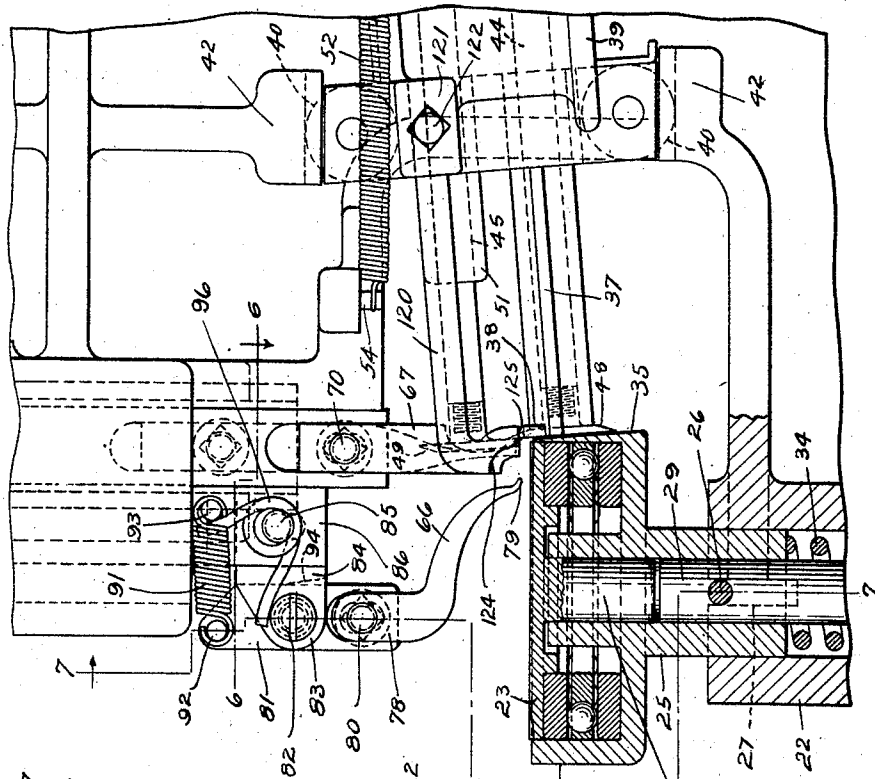
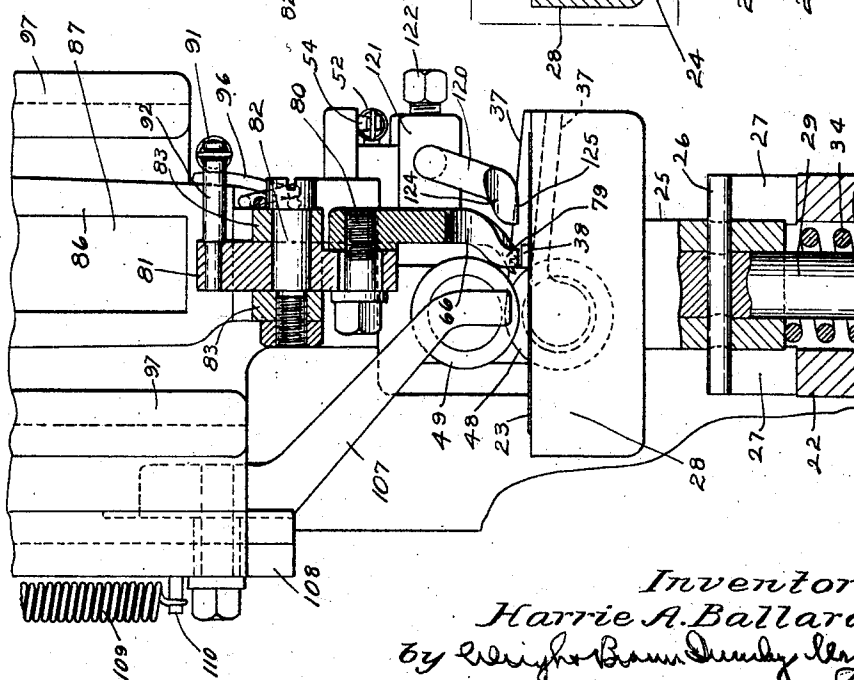


Fig. 7.



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MACHINE FOR TUCKING AND TRIMMING FABRIC COVERED INNERSOLES

Filed March 8, 1921

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Fig. 10.

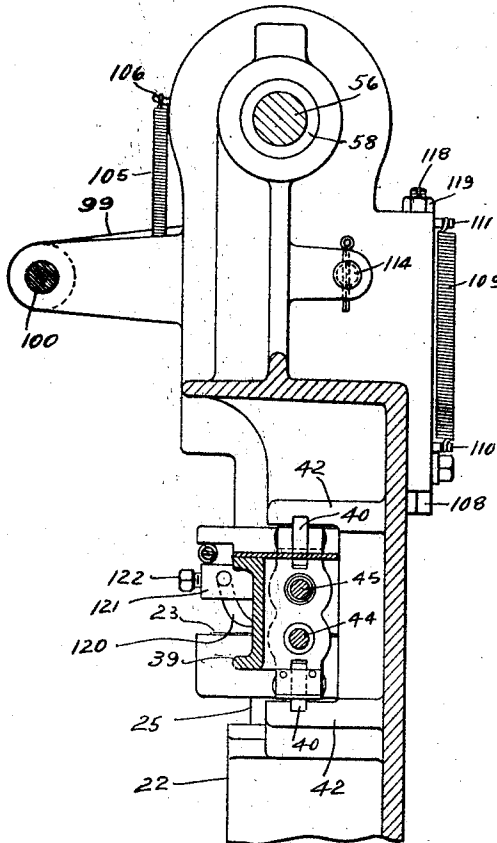


Fig. 11.

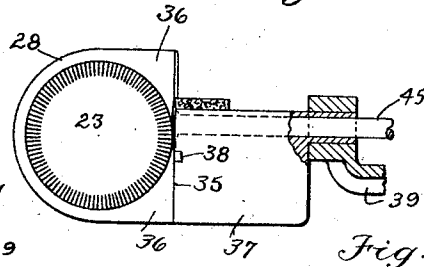


Fig. 12.

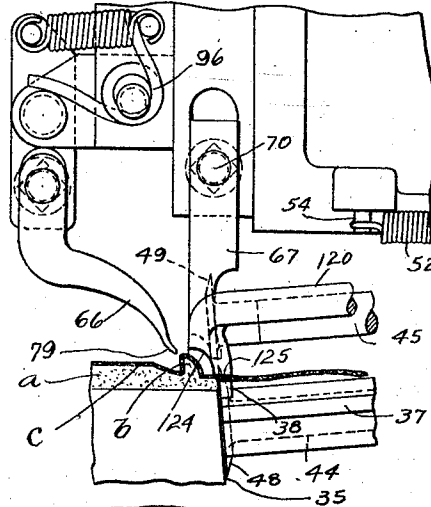
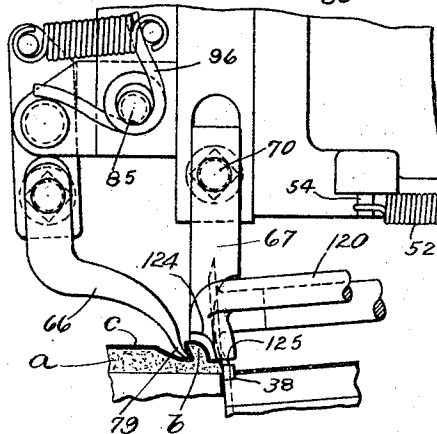


Fig. 13.



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UNITED STATES PATENT OFFICE.

HARRIE A. BALLARD, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO GENERAL SHOE MACHINERY COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

MACHINE FOR TUCKING AND TRIMMING FABRIC-COVERED INNERSOLES.

Application filed March 8, 1921. Serial No. 450,673.

To all whom it may concern:

Be it known that I, HARRIE A. BALLARD, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Machines for Tucking and Trimming Fabric-Covered Innersoles, of which the following is a specification.

This invention has for its object to provide an improved machine for tucking a layer of fabric into the channels of an innersole and for trimming the fabric along the edge of the innersole, in the production of "gem" innersoles, so-called, and it comprises improvements in certain features of construction, relation and operation such as hereinafter described. Those instrumentalities of the machine selected for illustration and description as best exemplifying my invention, which operate directly on the work, comprise an inner tucking member or finger which is adapted to enter the inner channel and force the fabric thereinto, a member which engages and smoothes down the fabric on the feather edge, a presser-foot and a combined feeding and tucking member or finger which are arranged to bear upon the work in alternation, and cutting members which are arranged to trim off the surplus fabric on a line along the edge of the innersole. The presser-foot is arranged for vertical reciprocation, whereas the feeding and tucking members have a fourway motion imparted thereto to effect a step-by-step movement to the work. In addition the inner tucking member is so mounted and operated that its operative end is caused to slide on and across the face of the innersole toward the inner wall of the lip or rib. Furthermore, it is located opposite the outer tucking and feeding member (which is arranged to force the fabric into the re-entrant angle formed by the rib and the feather) so that the fabric-covered rib or lip is gripped between them, and the two instrumentalities may be operated more or less in unison by the same power-transmitting member. In turning the toe, it is desirable that the length of the longitudinal feeding movement of the inner tucking member may be reduced without affecting the feeding movement of the outer tucking member, and I provide means, under manual control, by which this may be effected. The edge of the

innersole, as it is being fed, is pressed against an edge gage which is so related to the carriage for the trimming cutters that the latter are automatically adjusted to follow the edge of the sole. The trimming cutters preferably comprise a pair of coaxial edged disks, arranged to engage the projecting edge of the fabric in proximity to the presser-foot and the feeding and tucking members, and having their axes inclined to the horizontal (or to the plane of the work support) so that the line of cut is slightly inside the edge of the feather. As a matter of construction, the same carriage, which supports the cutters, is utilized to support the member which presses down the fabric on the feather edge in advance of its engagement by the feed member.

On the accompanying drawings,—

Figure 1 illustrates in side elevation a machine embodying the invention.

Figure 2 represents the machine in front elevation.

Figure 3 represents the same in vertical longitudinal section.

Figure 4 represents, on a larger scale, a section on the line 4—4, Figure 3 (omitting the work table).

Figure 5 represents a section on the line 5—5, Figure 3.

Figure 6 represents a section on the line 6—6, Figure 8.

Figure 7 represents a portion of the machine in front elevation, and partially in section, on the line 7—7, Figure 8.

Figure 8 represents a portion of the machine in side elevation, the work table being shown in section.

Figure 9 (Sheet 1) shows in elevation, from the side opposite that in Figure 2, the head of the machine and certain of the parts supported thereby.

Figure 10 represents a vertical section on the line 10—10, Figure 2.

Figure 11 shows the work table in plan view, and also a part of the cutter carriage, the edge gage, one of the cutters and the work table which is movable with the cutter carriage.

Figures 12 and 13 represent the operation of the work-engaging instrumentalities, Figure 12 showing the tucking member and the feed dog disengaged from the work, and

Figure 13 showing them in engagement with the work.

Referring to the accompanying drawings, the machine there illustrated comprises a suitable head 20 mounted upon a standard 21. Upon this head are mounted the various operating instrumentalities with the exception of the foot treadles by which certain of the instrumentalities are under manual control. The head is provided with a forwardly-projecting bracket terminating in an upright tubular bearing 22 in which the work table is mounted. Any suitable form of support may be utilized to receive the work and to permit it to be fed. The work table comprises a rotary disk 23 having a central stem 24 journaled in a sleeve 25, which is mounted to move vertically in a tubular bearing 22, and which is held against rotation by a cross-pin 26 extending into slots 27 in the sides of the tubular bearing. The sleeve 25 is provided with a flange 28 forming a housing, the upper edge of which lies in a plane slightly below the upper face of the disk 23. The disk 23 is supported near its outer edge by suitable anti-friction bearings which need not be described in detail, as this is not an uncommon construction. The pin 26 secures to the sleeve 25 a rod 29, to the lower end of which is secured a chain or other connection 30 extending downwardly to a foot treadle (not shown), but which the operator may depress so as to lower the work support bodily. The lower end of the rod 29 slides through a threaded sleeve 31 screwed into the lower end of the tubular bearing 22 so as to be adjustable vertically therein. The extremity of the rod 29 is threaded to receive the nuts 32, 33. A spring 34 is located in the bearing, one end abutting against the lower end of the sleeve 25 and the other end abutting against the externally threaded sleeve 31 so as to force the work support as a whole bodily until the nut 32 engages the end of the sleeve 31. The upper face of the disk 23 may be radially corrugated near its outer edge as shown in Figure 11.

It will be observed that the flange 28 of the nonrotatable portion or housing of the work support is flattened at its rear side, as indicated at 35, to form a flat face which is inclined approximately 5° to the vertical. This housing 28 is of the shape in plan view as illustrated in Figure 11, one side of it being semi-circular and the other rectangular so that it has the flat angular faces 36. Adjacent the member 28, there is a supplemental flat table 37, which is movable towards and from the main work support, as will be explained. This supplemental table is provided with an edge gage 38 against which the edge of the feather of the innersole may be pressed by the operative. The supplemental work table is connected to the carriage which supports the trimming cutters, this carriage being indicated as a

whole at 39 (see Figures 2, 3 and 10). The carriage consists of a suitable frame in which are journaled rolls 40, 40, 41, 41, arranged in two pairs and movable in horizontal guides afforded by the main head or frame of the machine. The guideways for the rolls 40 are indicated at 42, 42, and those for the rolls 41 are indicated at 43, 43. It will be observed that the guideways 43 are in horizontal planes vertically above the corresponding guides 42 for the rolls 40. Journaled in bearings afforded by the carriage, there are two knife shafts 44, 45, which are parallel to each other but which are inclined at an angle of about 5° to the horizontal. These two shafts are geared together by gears 46, 47, the teeth of which are long enough to permit a limited axial sliding engagement. On what in this case may be termed the forward ends of the shafts, are located coacting disk cutters 48, 49, which slightly overlap each other, the front face of the cutter 49 being held against the flat face of the cutter 48 by a spring 50 which encircles the shaft 45 with one end bearing against the gear 47 and the other end bearing against a bushing 51 in which the shaft 45 is mounted. The flat face of the cutter 48 bears against the flat face 35 of the housing flange 28 of the work support. The entire carriage is drawn forwardly towards the work support by a spring 52 (see Figure 2), one end of which is attached to a pin 53 on the carriage and the other end of which is attached to a pin 54 on the main frame or head. The supplemental table 37 is formed on or secured to a bushing 55 in which the forward end of the shaft 44 is mounted, said bushing being secured of course to the carriage 39. The upper face of the supplemental table may be slightly inclined downwardly and to the right, viewed from the front end of the machine, as best shown in Figure 7. By reason of the inclination of the shafts 44, 45, to the horizontal, and the inclination of the overlapping faces of the disk cutters to the vertical, the fabric layer on the innersole may be cut inside of the feather edge of the innersole, this being in part determined by the location of the edge gage 38 on the supplemental table. Normally the spring 52 holds the carriage yieldingly in a forward position (to the left in Figure 3) so that the front edge of the supplemental table engages the housing flange 28 with the flat face of the cutter 48 against or close to the front face 35 of said housing flange; but, as the work is fed (by means to be explained), the engagement of the feather edge with the edge gage may force the carriage rearwardly, or to the right in Figure 3, so that the cutters will trim the projecting portions of the fabric on a line conformable to the edge of the innersole.

Any suitable means may be utilized for driving the cutter shafts 44, 45. I have illustrated the machine as being provided with a main driving shaft 56 equipped with a pulley 57 by which it may be rotated. This shaft is journaled in bushings 58, 59, suitably located in the head or frame 20. At 60 there is located a stud shaft on which is journaled a gear 61 intermeshing with and driving a bevel gear 62 on the shaft 44. The gear 61 intermeshes with and is driven by a gear 63 keyed to the shaft 56. Of course any other form of power-transmitting mechanism may be substituted for that shown so as to effect the driving of the shaft 44 from the main shaft 56. The stud shaft 60 is illustrated as having an enlarged portion 64 driven friction-tight into a socket in the frame until the end of the shaft engages a bent bracket 65 secured to the frame, this bracket serving to hold the idler gear 61 in place on the stud shaft. The shaft 56 is utilized to cause the operation of the other operative elements of the machine which are power driven.

I have previously stated that the machine is provided with what I have termed an inner tucking member, an outer tucking member which also serves in effecting the feed of the work, a presser-foot, and a smoothing finger which operates on the feather of the work in advance of the cutters. I have referred to the two tucking members as "inner" and "outer", in view of the fact that one presses the fabric into what may be termed the inner channel of the innersole and the other presses it into what may be termed the outer channel, that is the one nearest the outer edge of the innersole. The two tucking members are indicated respectively at 66, 67. That at 67 has the shape illustrated in Figures 3 and 4; that is to say, it is slightly recessed as at 68 at its lower end so that it fits down upon the rib on the work and forces the fabric down into the outer channel. Its extremity is serrated as at 69 in order that it may effectively engage the feather of the innersole outside of the rib to effect the feeding thereof. It will be observed from Figure 4 that, viewed in front elevation, the member 67 is laterally curved near its lower end so as to bring its engaging portion close to the cutters 48, 49. The shank of the member 67 is adjustably secured by a screw 70 to a carrier in the form of an arm or lever 71 which may be rocked about an axis midway between its ends and also moved vertically up and down. This lever 71, as shown in Figure 4, between its ends is provided with a rectangular recess 72 in which is located a block 74, the latter being journaled on a stud 75 secured to the head or main frame. The upper end of the rocking lever 71 fits upon a bushing 76 located

on an eccentric 77 formed on or secured to the front end of the main driving shaft 56. Hence, when the said shaft is rotated, the lever 71 is rocked about the pivot stud 75 and is also moved up and down, whereby a four-way motion is imparted to the combined tucking and feeding member 67. That is, the feeding member is first depressed into engagement with the work and is then moved to the left in Figure 4 to advance the work one step, after which it is then moved vertically out of engagement with the work and to the right so that it may be again depressed into engagement with the work.

The inner tucking member 66 has its operative end located opposite the operative end of the feeding member 67 so that the rib on the innersole may be passed between them. This tucking member 66 consists of a finger having the conformation best shown in Figures 7 and 8. That is to say, it is provided with a shank 78 by which it may be secured to its support, and a curved body portion terminating in a curved extremity 79 of a shape adapted to force the fabric into the inner channel and under the undercut face of the rib as indicated in Figure 13. Viewed from the front of the machine, the finger 66 is curved laterally to bring its operative end directly to confront the operative end of the feeding member. The shank 78 of the member 66 is secured adjustably by a screw 80 to a short lever 81 which is pivoted midway between its ends upon a screw pin 82, passed through ears or lugs 83 on a block 84. This block 84 is likewise pivoted on a pin or stud 85 secured in the lower end of a carrier consisting of a rocking lever 86. This lever 86, as shown in Figure 5, has a longitudinal slot 87 in which is located an angular block 88 on a stud 89 which is adjustable in vertical lines by means to be explained. The upper end of the lever 86 is apertured or recessed to fit on a bushing 90 located on the eccentric 77 formed on the driving shaft 56, so that, as the shaft is rotated, the lever 86 is moved up and down and is also swung about the axis of the stud 89. The short lever 81 is adapted to rock about the axis of the screw pin 82, and, since the extremity of the finger 66 is located on one side of the axis of said screw pin, it will be observed that, as soon as the extremity of the tucking finger engages the surface of the fabric on the innersole during the descent of the rocking lever 86, the finger will be caused to slide across the face of the fabric and into the reentrant angle formed by the rib and the surface of the inner sole. The short lever 81 is held normally in a vertical position by a spring 91, one end of which is attached to a pin 92 on the upper extremity of the lever 81, and the other end of which is attached to

a pin 93 projecting laterally from the lower end of the rocking lever 86. The extent to which the short lever 81 may swing about its pivot is limited by an inclined face 94 on the block 84. The block 84 is capable of a limited movement longitudinally of the rocking lever 86. For this purpose, it will be observed that it is provided with a slot 95 (see Figure 3). A spring normally holds the block 84 downwardly. It may, with convenience, be in the form indicated at 96; that is, coiled about the pin 85 with one end engaging the screw pin 82 and its other end engaging the pin 83, as shown in Figure 8, so that its pressure is exerted upon the block 84 to hold it yieldingly downwardly. If it should not be regarded as essential that the tucking finger should be capable of a vertical yielding movement, the block 84 could be formed on or secured rigidly to the lower end of the rocking lever 86. And again, if desired, the short lever 81 could be formed integrally with the finger 66 so as to constitute an extension of the shank thereof. It is desirable, however, to permit of an adjustment of the finger 66 in reference to the screw pin 82, and, for this reason, it is formed separately from the short lever 81 and adjustably secured thereto. The detachability of the finger from the short shaft enables me to substitute fingers particularly designed for the character of the innersole being tucked and trimmed. It is also desirable that the finger should be capable of yielding bodily in reference to the rocking lever by which it is actuated so that it may be used with innersoles of different thickness.

I have referred to the fact that the rocking lever 86 is mounted upon a stud 89, and that the latter is vertically adjustable. Ordinarily the stud 89 is axially aligned with the stud 75 for the rocking lever 71 which carries the combined feeding and tucking finger or member 67. When the parts are located in this position, the extent of feeding movement of the two fingers 66, 67, is the same, and the parts are therefore ordinarily maintained in this relation when the fingers are engaged with the rib along the sides of the innersole. When the end of the innersole, however, is to be tucked, particularly when the innersole is of a pointed shape, it is desirable that the feeding movement of the finger 66 should be much shorter than the feeding movement of the finger 67. For this reason, the stud 89 is secured to a slide 96 movable in a vertical guideway formed in the main frame or head at 97. To this slide is pivoted a link 98 having its upper end pivoted to an arm 99 secured to a rock-shaft 100. This rock-shaft extends from front to rear of the machine, and on its rear end it has an arm 101 which is connected by a chain or other connection 102

with a foot treadle, not shown, but so arranged that, on the depression of the treadle, the arm 99 will be depressed to carry the stud 89 and the block 88 thereon down to the lower end of the slot 87 in the lever 86, and thus so shift the fulcrum for said lever 86 that the feeding movement of the finger 66 is negligible or in any event much shorter than the feeding movement of the finger 67. The link 98 may be engaged with the reduced forwardly-projecting end of the stud 89 and held in place thereon by a nut 103 and washer 104. A spring 105 is secured to the arm 99 and to a pin 106 on the frame so as normally to draw the arm 99 upwardly until the axis of the stud 89 is in line with the axis of the stud 75 on which the rocking lever 71 is fulcrumed.

In cooperation with the two tucking and feeding members or fingers 66, 67, I employ a presser-foot which is operated in alternation therewith so that it is lifted from the work when the feeding fingers are engaged with and moving the work, and which is depressed into engagement with the work when said fingers are disengaged therefrom. This presser-foot is indicated at 107 and is located just in front of the cutters, as shown in Figure 1. It is formed and located to engage the feather edge of the innersole, and it is secured (as shown in Figure 4) to a vertically-adjustable bar or carrier 108 mounted in guideways on the left side of the machine viewed from the front. To this bar or carrier there is secured by pin 110 one end of a spring 109, and the upper end of the spring is secured to a pin 111 projecting laterally from the head. The upper end of the carrier 108 is recessed or slotted at 112 to receive the end of a rocking lever 113 which is fulcrumed upon a stud 114. The other end of the rocking lever is connected by a pintle 115 with a link 116 pivoted by a pin or stud 117 to the rocking lever 71 at a point adjacent the eccentric 77, as best shown in Figure 4. The rocking lever 71 has an internal recess in which the link 116 is located and into which the end of the rocker 113 extends. The outer end of the rocker 113 is engaged with an adjustable abutment screw 118 extending into the end of the carrier 108 and locked in adjusted position by a nut 119. It is quite evident from the foregoing description (taken in connection with Figure 4) that, as the rocking lever or carrier for the pin 67 is depressed, the carrier 108 is raised and vice versa.

In addition to the foregoing elements or instrumentalities I provide a member which is adapted to rest upon and smooth down the fabric upon the rib and feather of the innersole in advance of the cutters and the tucking members. The instrumentality referred to comprises a rod or bar 120 adjustably secured to the carriage 39. It projects

into an ear or lug 121 formed on said carrier and is held in place by a set screw 122. The forward end of said bar or rod projects downwardly and laterally, as shown in Figure 7, and its operative end portion 123 is so shaped as to bear against the outside of the rib and against the feather so that, as the work is fed therebeneath, the fabric is smoothed and pressed downward into engagement with the rib and the feather; that is to say, it has a concave face 124 corresponding to the curved face of the rib and a flat face 125 to rest upon the feather. The concave face does not always engage the fabric on the rib for the reason that the smoothing member is supported by the carriage for the cutting knives; and consequently at certain times, if the rib is located at variable distances from the edge of the feather, the smoothing member may separate from the rib, as for instance at the shank portion of the inner sole where the rib is further from the feather than in the forepart of the innersole.

Assuming that the innersole *a* has been channelled and the lips turned to provide a rib *b*, and that the blank of frictioned fabric *c* (or a fabric coated with some other suitable adhesive) has been placed upon the face of the innersole and pressed thereagainst sufficiently so that it sticks in place, the main work support is now depressed so that the innersole may be placed thereon with the end of the rib at the inner side of the shank in line with the space between the two tucking and feeding fingers. The treadle is released and the main work support moves upwardly and presses the innersole against the member 120. The machine is started in operation, whereupon the presser-foot and the tucking fingers are moved alternately into and out of engagement with the work, the work being fed intermittently by the finger or member 67 and the finger or member 66. The fabric laying and smoothing member 120 presses the fabric down upon the feather, and the two fingers 66, 67 force the fabric into the two channels or reentrant angles on both sides of the rib. The outer tucking member presses the fabric against the outer face of the rib and tends to crowd the rib bodily inwardly. At the same time, the lateral sliding movement of the end of the finger 66 has the effect of smoothing the fabric laterally into the inner channel and against the inner face of the rib. In fact, since the end of the finger 66 moves toward and from the end of the finger 67, at the base of the rib, the tendency is to crowd the crown of the rib inwardly or laterally over the end of finger 66, as shown in Figure 13; so that an acute angle needle-receiving groove or channel is formed in the innersole. As the innersole is fed along, the disk cutters sever the fabric along a line just inside the edge

of the feather, the cutter carriage being moved against the tension of its spring by the engagement of the edge of the feather with the edge gage.

The movement of the carriage (which carries the trimming cutters, the supplemental table, the edge gage, and the smoothing finger) toward the work table and its housing may be limited by an abutment screw 127, passed through a block 128 supported by the frame, and arranged to engage said carriage, as shown in Figure 3. Thus the carriage may be stopped or limited in its forward movement so that the face of the trimming disk 48 will engage or lie close to the inclined face of the housing of the work table.

Having thus explained the nature of my said invention and described a way of making and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:—

1. An innersole machine comprising a pair of tucking fingers arranged to operate on opposite sides of an innersole rib, means to move said fingers to feed the innersole, and means whereby the extent of feed movement of said fingers relative to each other may be varied.

2. An innersole machine comprising a pair of tucking fingers arranged to operate on opposite sides of an innersole rib, means to move said fingers to feed the innersole, and means whereby the extent of feed motion of the finger operating on the inner side of the rib may be made less than that of the finger operating on the outside of the rib.

3. An innersole machine comprising two coacting tucking fingers arranged one opposite the other, one being shaped to engage the feather and one side of the rib of an innersole, and the other being arranged to engage the base of the rib on the other side thereof, mechanism for imparting a four-way motion to said fingers to feed the work, and mechanism under manual control to vary the extent of motion of one of said fingers relatively to the other.

4. An innersole machine comprising an outer tucking finger and an inner tucking finger, respectively arranged to tuck the fabric into the outer and inner channels, an oscillatory longitudinally-slotted lever for each finger, pivot means passing through the slots of said levers, and an eccentric operatively engaged with said levers, by which said levers are oscillated and a four-way motion imparted to each finger.

5. An innersole machine comprising an eccentric, a pair of oscillatory longitudinally-slotted levers operatively engaged with the eccentric, inner and outer tucking fingers carried on the lower ends of the respective levers, a fixed pivot entering the

slot of one of said levers, a separated pivot entering the slot of the other lever, and manually-operated means for moving the last-mentioned pivot longitudinally of the slot of its associated lever.

6. In an innersole machine, a pair of longitudinally slotted levers each having a tucking finger at its lower end, individual pivots entering the slots of said levers to serve as fulcrum therefor, mechanism for simultaneously oscillating said levers about said pivots and imparting a longitudinal movement thereto, and manually-controlled means for moving one of said pivots into and out of axial alinement with the other.

7. In an innersole machine, a work support, an outer tucking finger, an inner tucking finger, a carrier movable toward and from the face of the work support, said finger being pivoted on one side of said carrier and projecting across the path thereof toward the outer tucking finger, and a spring engaging said finger and said carrier, all so arranged that, when said carrier is moved toward the work support, the operative end of the finger first engages the face of the innersole and then slides across the same to the base of the lip thereon.

8. In an innersole machine, a carrier, means to impart a four-way oscillatory motion thereto toward and from the work and longitudinally of the direction of feeding movement of the work, and a spring-tensioned tucking finger pivoted to said carrier to permit its free operative end to move transversely of the direction of feeding movement of the work across the face of the innersole.

9. In an innersole machine, a pair of coacting inner and outer tucking fingers, the outer finger having its operative end shaped to engage the feather and also the wall of the rib of the innersole to crowd the rib inwardly, and the inner finger having its operative end shaped to engage the inner wall of the rib at the base thereof, means by which the operative end of the inner finger is movable transversely across and in contact with the face of the innersole transversely of the said rib, and mechanism for moving said fingers toward and from the face of the work.

10. In an innersole machine, a pair of coacting inner and outer tucking fingers, carriers for said fingers, the inner finger having its operative end yieldingly slidable on the face of the innersole transversely of the rib thereon, and being shaped to engage the inner wall of said rib at the base thereof, and the operative end of the outer finger being shaped to bear upon the feather and the outer wall and top of the rib, and mechanism for imparting movement to said carriers toward and from the face of the innersole.

11. In an innersole machine, a pair of coacting inner and outer tucking fingers, carriers for said fingers, the inner finger having its operative end yieldingly slidable on the face of the innersole transversely of the rib thereon, and being shaped to engage the inner wall of said rib at the base thereof, and the operative end of the outer finger being shaped to bear upon the feather and the outer wall and top of the rib, and mechanism for imparting movement to said carriers toward and from the face of the innersole and longitudinally of the rib of said innersole to effect a combined tucking and feeding operation.

12. In an innersole machine, a carrier bar, a block at one end thereof, having a limited yielding movement longitudinally thereof and having a lateral projection, a tucking finger pivoted to said lateral projection and extending under the end of the carrier, and having a limited rocking movement about its pivot, and springs exerting yielding pressure against said block and said finger respectively.

13. In an innersole machine, a pair of oppositely-arranged coacting tucking fingers, mechanism for operating said fingers to tuck the fabric into the inner and outer channels against the rib on the innersole and to feed the innersole longitudinally of the rib, a presser-foot on one side of said fingers, mechanism for actuating said presser-foot, and a fabric-smoothing member on the other side of said fingers for laying down and smoothing the fabric on the feather in advance of the action of said fingers on the work.

14. In an innersole machine, a work table having a face on which the innersole may rest, an enclosing housing having an inclined flat face at an obtuse angle to said face, and a pair of coacting cutting disks having their overlapping faces constantly parallel to said face, one of said disks being adapted to bear against said face.

15. An innersole machine comprising a rotary work table having a substantially flat face to support the work, an enclosing housing, a supplemental table movable toward and from said housing, an edge gage on said supplemental table, and trimming mechanism movable with said supplemental table.

16. An innersole machine comprising a work table, a presser-foot, a pair of coacting feeding and tucking fingers in advance of said presser-foot, a smoothing finger in advance of said fingers, trimming cutters located to trim the fabric at a point between the tucking fingers and the presser-foot, and mechanism for operating the presser-foot, the said tucking fingers and the said cutters.

17. In an innersole machine, a work table, a frame, a carriage movable on said frame toward and from said table, a smoothing

finger adapted to lay the fabric down on the innersole and mounted on said carriage, and coacting trimming cutters mounted on said carriage.

5 18. In an innersole machine, a work table, a presser-foot movable toward and from said table, a feed finger, a longitudinally-slotted carrier having said finger at its lower end, a pivot extending into said slot about 10 which said carrier may oscillate and move lengthwise, an eccentric engaged with the upper end of said carrier, and means connecting said carrier with said presser-foot whereby said presser-foot is reciprocated 15 thereby but in an opposite direction.

19. In an innersole machine, a work table, a presser-foot movable toward and from said table, a feed finger, a longitudinally-slotted carrier having said finger at its lower end, a pivot extending into said slot about 20 which said carrier may oscillate and move lengthwise, an eccentric engaged with the upper end of said carrier, a pivoted lever having one arm engaging said presser-foot, and a link connecting the other arm of said 25 lever with said carrier.

In testimony whereof I have affixed my signature.

HARRIE A. BALLARD.