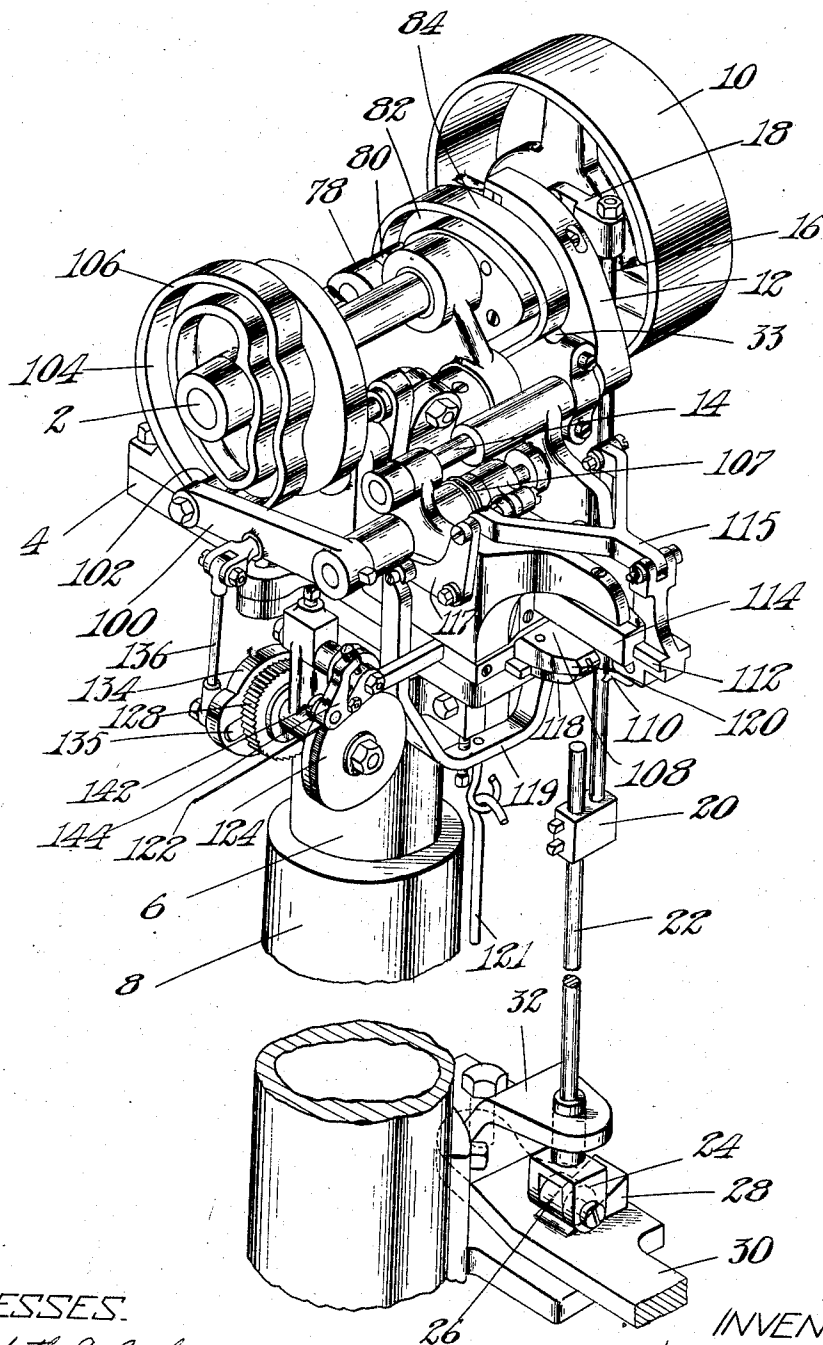


W. J. DREY.
MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.
APPLICATION FILED OCT. 3, 1910.

1,011,592.

Patented Dec. 12, 1911.

3 SHEETS—SHEET 1.



WITNESSES:
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Fig. 1.

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3 SHEETS-SHEET 2.

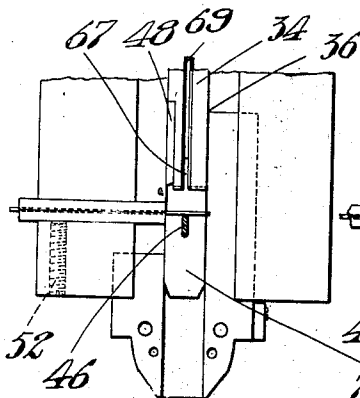
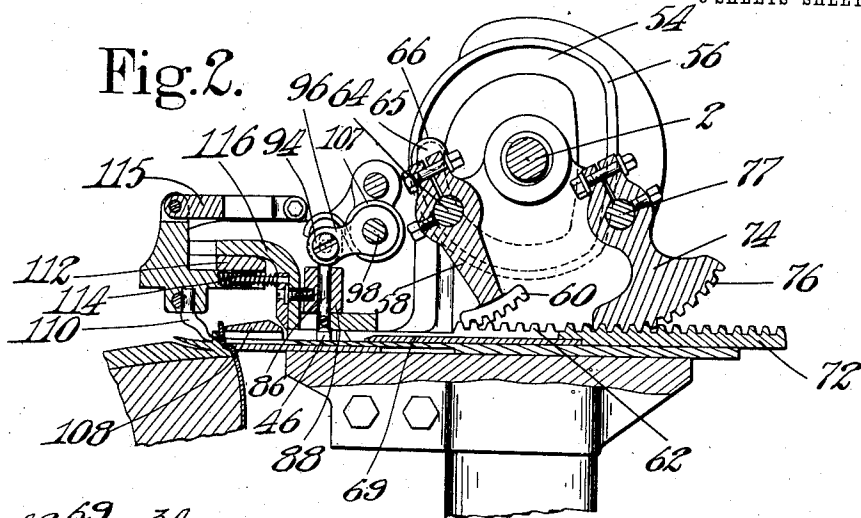


Fig. 3.

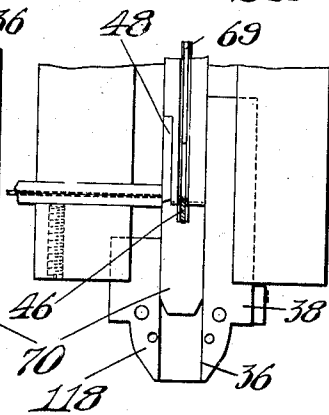


Fig. 4.

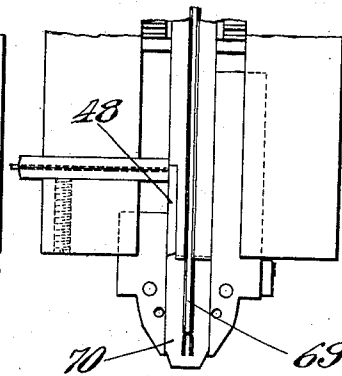


Fig. 5.

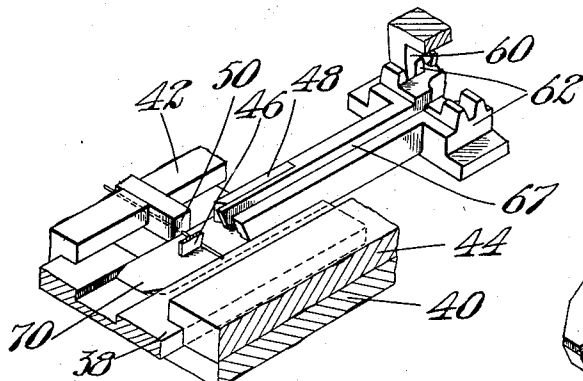
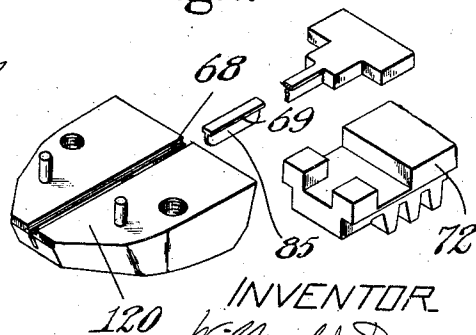


Fig. 6.

Fig. 7.



WITNESSES.

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3 SHEETS—SHEET 3.

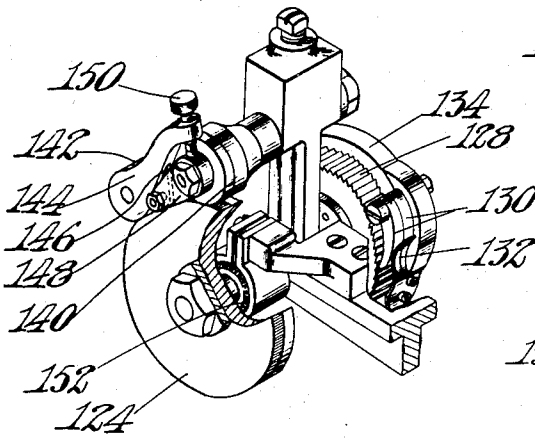


Fig. 8.

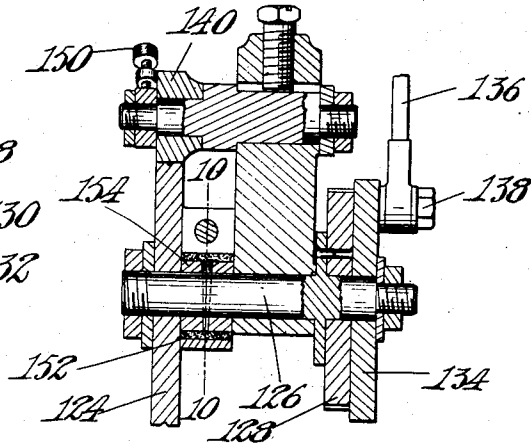


Fig. 9.

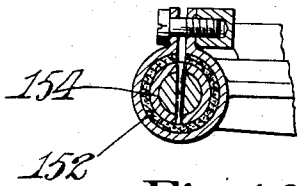


Fig. 10.

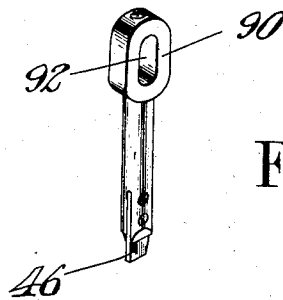


Fig. 11.



Fig. 12.

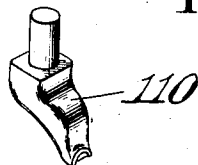


Fig. 13.

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UNITED STATES PATENT OFFICE.

WILFRED J. DREY, OF CATAWISSA, PENNSYLVANIA, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR USE IN THE MANUFACTURE OF BOOTS AND SHOES.

1,011,592.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed October 3, 1910. Serial No. 585,061.

To all whom it may concern:

Be it known that I, WILFRED J. DREY, a citizen of the United States, residing at Catawissa, in the county of Columbia and State of Pennsylvania, have invented certain Improvements in Machines for Use in the Manufacture of Boots and Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for inserting fastenings and is herein shown as embodied in a machine for forming and inserting staples, although it will be understood that many features of the invention are susceptible of wide application.

An object of the invention is to provide an improved staple inserting machine which will form and insert staples of fine wire, a particular object of the invention being to provide a staple inserting machine which will insert staples of fine wire through the upper and the channel lip or the rib or shoulder of the sole of a lasted shoe, while the shoe is in its original lasted condition, and will so locate these staples that they will hold the parts in lasted position during the succeeding sewing or welt attaching operation and will not interfere with the operation of the sewing or welt attaching machine, nor with the in-seam trimming operation, whereby they may be left in the shoe to form part of the permanent fastenings.

Another object of the invention is to provide in a fastening inserting machine improved means for placing the parts to be united by the fastening in proper position for receiving the fastening, before the fastening inserting operation.

Other features and objects of the invention will be apparent from a consideration of the following description and claims in connection with the accompanying drawings, in which,—

Figure 1 is a perspective view of the machine, parts of the base and standard being broken away in order that the other parts may be shown on a larger scale; Fig. 2 is a longitudinal section through the head of the machine showing a portion of a woman's shoe in position to be operated upon; Figs.

3, 4 and 5 illustrate, respectively, the wire feeding, staple forming and staple driving operations, Fig. 5 showing also the operation of the tucking tongue which is carried by the outside former; Fig. 6 is a perspective detail of the staple forming mechanism; Fig. 7 is an inverted exploded view illustrating the mode of attachment of the staple driver; Fig. 8 is a perspective view of the wire feeding mechanism; Fig. 9 is a vertical section through the wire feeding mechanism; Fig. 10 is a transverse section through the bearing of the feed wheel shaft showing the frictional means for preventing overthrow; Fig. 11 is a detail view of the inside former; Fig. 12 shows the staple formed by the machine, much enlarged, and Fig. 13 is a perspective view of the clenching tool.

The cams from which the various mechanisms are operated are connected to a main driving shaft 2 mounted in bearings in a head 4 carried by a post 6 vertically adjustable in a standard 8. A driving pulley 10, loosely mounted upon the shaft 2, is arranged to be clutched to said shaft, at the will of the operator, by any suitable clutch mechanism which may be controlled by a lever 12 carried upon a rock-shaft 14 and connected by a rod 16 and an arm 18, carried by said rod, to an adjusting block 20, adjustable upon a second rod 22. The rod 22 carries at its lower end, between ears 24, a roller 26 arranged to be engaged by a wedge 28 carried by a knee lever 30 fulcrumed to turn about a vertical axis in a bracket 32 in which the rod 22 is guided. A brake arm 33 acting upon a brake disk upon the shaft 2 may be clamped to the rock-shaft 14 as shown in Fig. 1.

As hereinabove suggested, the machine comprises staple forming mechanism and staple driving mechanism constructed and arranged to drive a staple through the upper and the channel lip or the shoulder of the sole of a lasted shoe, and means for clenching the staple upon the inside of the channel lip or in the inside channel. The staple forming mechanism, herein shown, comprises an outside former 34 arranged to slide in a guideway 36 in the head of the machine, this guideway being formed, preferably, in a plate 38 which rests upon the

stand 40 and which is held in position by overhanging portions of uprights 42 and 44 which carry the bearings for the main shaft 2 and for the various rock-shafts and levers hereinafter to be referred to. The outside former is constructed and arranged to embrace an inside former 46, as it moves forward, and to form around the inside former a length of wire which has previously been fed into position to be acted upon by said outside former. The wire which is to form the staple is preferably severed in advance of the staple forming operation, and the illustrated means for severing the wire comprises a cutter 48 carried by the outside former, said cutter cooperating with a wire guide 50 adjustably held in a groove in the part 42 by a set screw 52. The outside former is moved into cooperative relation to the inside former to form the staple by means operated from a cam groove 54 in a cam disk 56 on the shaft 2, said means comprising a lever arm 58 having at its lower end a segment rack 60 which engages rack teeth 62 formed upon the rear end of the outside former. The lever arm 58 is connected to a rock-shaft 64 fulcrumed in the machine head. The other arm 65 of the rack operating lever is also connected to the rock-shaft 64 and is provided with a cam roller 66 which enters the cam groove 54. The groove 67 in the outside former which receives the inside former is enlarged at its lower side so that it forms a guiding groove 68 for the staple when it is being driven and also a guiding groove for the staple driver 69. Below the enlarged lower portion of the groove in the outside former there is a solid portion of the outside former which closes the groove and forms a support for the staple driver 69, this portion being extended at the front of the outside former to form a tongue 70 having a novel function hereinafter to be referred to. The staple driver 69 is T-shaped at its rear end and is connected to a rack slide 72 provided with a T-shaped opening to receive the T-shaped end of the driver, the construction of these parts being shown in detail in Fig. 7 of the drawings. Staple driving movement is imparted to the driver through a lever 74 having at its lower end a segment rack 76 which engages the rack teeth of the rack slide 72. The lever 74 is connected to a rock-shaft 77 fulcrumed in the machine head, and the other arm 78 of said lever, which is also connected to said rock-shaft 77, is provided with a cam roller 80 which enters a cam groove 82 in a cam disk 84 connected to the shaft 2. A stiffening rib 85 upon the driver 69 is received in the groove 67 of the outside former. As the staple driver 69 is moved forward, by the connections just described, to drive the staple, the inside former 46 is moved out of

the way of said driver, said inside former being carried by a bolt 86 arranged to slide vertically in a guideway 88 in the machine head, said bolt being provided at its upper end with a head 90 having a slot 92 in which is received a pivot pin 94 upon an arm 96 attached to a rock-shaft 98 having its bearings in the machine head. The rock-shaft 98 projects through the upright 42 and carries at its outer end an arm 100 provided with a cam roll 102 which travels in a cam groove 104 in the cam disk 106. A spring 107 tends to keep the upper end of the slot 92 in engagement with the pin 94. The forward end of the guideway for the outside former, and for the staple driver, is formed in a nose 108 which is so shaped that it will enter between the lasting tacks of a lasted shoe and guide the staple in a substantially horizontal line through the upper and channel lip of the insole of said shoe, the guideway in said nose being in line with the clenching end of a staple clencher 110 carried by a dove-tailed slide 112 arranged to slide in a guideway 114 in a bracket 116 overhanging the nose 108. The slide 112 is connected by link 115, bell-crank lever 117, a yoke 119 engaging said bell-cranks 117, and a second link 121 to a suitable treadle by which the staple clencher 110 may be moved into clamping relation to the nose 108. The nose 108 is preferably formed of two parts, a lower part 118 which contains an extension of the guideway 36 for the outside former and an upper part 120 which contains an extension of the T-shaped groove in the outside former, said outside former being arranged to move into approximately abutting relation to the rear end of the part 120 of the nose during the staple forming operation. The forward end of the part 120 of the nose 108 overhangs the part 118, and the tongue 70 upon the outside former is constructed and arranged to extend beyond the front end of the part 118 of the nose 108 when the outside former has completed its staple forming operation and thus close the lower side of the staple and driver guiding opening in the part 120, at the same time that it engages the upper and tucks it into the angle of union between the channel lip and the feather of the insole. The tongue 70 is tapered at its under side so that it tends to ride up over the edge of the insole as it presses the upper into position to receive the staple, this movement of the tongue serving also to force the shoe and last down and to bring the parts into such position that the staple is guided through the upper and channel lip in a line above the path of movement of the needle of the welter in the welt stitching operation. It will be noted also that the tongue 70 has a wiping as well as a pressing or tucking action as it comes forward, the upward taper

at the forward end of the tongue serving also to prevent injury to the upper as it is wiped over the corner of the last.

The wire 122 from which the staples are 5 to be formed may be carried by a reel suitably positioned to permit the wire to pass readily to the wire feeding mechanism. The illustrated wire feeding mechanism comprises a feeding wheel 124 carried upon 10 a feed wheel shaft 126 to which is connected a ratchet wheel 128 arranged to be engaged by pawls 130 pressed toward the ratchet teeth of said ratchet wheel by a spring 132. The pawls 130 are carried by a disk 134 15 loosely mounted upon the shaft 126 and connected by a link 136 to the arm 100 upon the rock-shaft 98. The disk 134 may be provided with a slot 135 to receive the pivot 138 of the link 136, the pivot 138 being ad- 20 justable along the slot 135 toward and from the center of the disk 134 to give different lengths of movement to the pawls 130 and thereby vary the length of wire fed into staple forming position. A presser roll 140 25 keeps the wire in engagement with the feed wheel 124 and, to counteract the tendency of the wire to curve in one direction by reason of the pressure of the presser roll 140 thereon, a second roll 142 is provided 30 which engages the wire at a different part of the periphery of the feed wheel 124, the two rolls 140 and 142 cooperating to curve the wire in a direction opposed to the direction in which it tends to curve as it leaves 35 the roll 140. The roll 142 is carried by a bracket 144 provided with a pin 146 received in the forked end of an arm 148 clamped to the shaft which carries the roll 140. To vary the pressure exerted upon 40 the wire by the roll 142 a set screw 150 is arranged in the bracket 144 to bear upon the arm 148 in such manner that the bracket 144 may be turned more or less about its pivot in the arm 148 as the screw 150 is 45 turned. The rotation of the feed roll shaft 126 is retarded by a friction sleeve 152 clamped around a second sleeve 154 pinned to said shaft.

The operation of the machine as a whole 50 may be briefly described as follows: The shoe to be operated upon is taken while still in its original lasted condition, with all the lasting tacks in place, and is presented to the machine in such a manner that the nose 55 108 enters between two of the lasting tacks and bears against the upper in the region of the shoulder of the insole or of the channel lip. The lower part 118 of the nose does not extend as far forward as the part 120 60 as hereinabove pointed out, thus leaving a space for the action of the tucking tongue 70. The nose being positioned to guide the staple into the desired location, the operator places his foot upon the treadle connected 65 with the slide 112 and moves the clenching

tool 110 into position behind the outer channel lip of the insole, if the shoe is provided with an insole of the ordinary type, and clamps the upper and channel lip tightly 70 between the clenching tool 110 and the nose 108. The knee lever 30 is then moved to actuate the clutch by which the loose pulley 10 is connected with the driving shaft 2 and a staple is formed and driven in the manner hereinabove set forth. As the outside 75 former 34 moves forward in the staple forming operation it carries with it the tucking tongue 70 which, as it projects beyond the lower part 118 of the nose, engages the upper and tucks it into the angle 80 of union between the feather of the insole and the channel lip, at the same time drawing it over the edge of the last and tending to shape it more closely to the last. As the outside former completes its movement 85 the end of the tongue 70 will be substantially flush with the end of the nose 108, the tongue 70 forming the lower part of the staple guiding opening in said nose. The action of the tongue 70 as it comes forward 90 also serves to depress the shoe or the insole and to position it in such a manner that the staple as it is driven is guided through the upper and the channel lip of the insole in a line above the path of movement of 95 the needle of the welter.

Although in the foregoing description of the operation of the machine it has been stated that the work is presented to the nose or throat and that the clenching tool is then 100 moved into engagement with the work, it will be apparent that the operator, if he so desires, may present the work first to the clenching tool and then cause the clenching tool to move the work into engagement with 105 the nose or throat. With some classes of work the mode of operation just described is preferable.

It will be understood that the operator, in selecting the place at which the staple is to 110 be inserted, must consider both the location of the lasting tacks and the condition of the part of the insole against which the staple is to be clenched. It is therefore important that the parts of the machine be so arranged 115 that the shoe may be adjusted freely after it has been engaged by one of the members of the clamping means and before it has been engaged by the other. This is quite 120 important owing to the fact that the work upon which the machine is to operate is extremely irregular in its nature. This freedom of adjustment is secured in the machine illustrated by the normal separation 125 of the nose and clenching tool and by the location and arrangement of these parts so that no other part of the machine interferes with the free adjustment of the shoe.

It will be noted that the outside former and the inside former have cooperating 130

bevels whereby the wire which is to form the staple is maintained in the plane of the staple driver during the staple-forming operation. It will be noted further that the clenching tool 110 has only one half of an ordinary clenching cup whereby both ends of the staple are turned down. However as these last mentioned features do not constitute a part of my invention, they will not be claimed herein.

The improved method of making shoes in the practice of which the machine of this invention is especially useful has been made the subject-matter of my co-pending application Serial No. 585,060, filed Oct. 3, 1910 and the improved shoe made by that method has been made the subject-matter of my co-pending application Serial No. 597,054, filed December 13, 1910.

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

1. In a machine of the class described, means for pressing together the upper and channel lip of a lasted shoe, means for inserting a fastening through these parts while they are pressed together, and means for tucking the upper into the angle of union between the feather of the insole and the channel lip in advance of the fastening inserting operation.

2. In a machine of the class described, means for inserting fastenings comprising a nose arranged to engage the work and guide the fastening to be inserted and means for pressing the work into position to receive the fastening comprising a movable wall of the fastening guiding opening in said nose.

3. In a machine of the class described, a fastening guiding nose, a clenching tool movable toward and away from said nose, a tucking tongue movable toward and away from said clenching tool and forming a wall of the fastening guiding opening in said nose, and means for moving said movable parts.

4. A fastening inserting machine for use in uniting the upper and insole channel lip while these parts are in their original lasted condition having, in combination, a stationary nose or throat constructed to enter between the lasting tacks and to guide the fastening through the upper and channel lip in a line substantially parallel with the bottom of the last and above the line of the welt stitches, fastening inserting means operating in said nose or throat and means movable into and out of work clamping relation to said throat for clenching the fastenings upon the opposite side of the channel lip.

5. A fastening inserting machine for use in uniting the upper and channel lip or rib of the insole while these parts are in their original lasted condition having, in combi-

nation, a nose or throat constructed to enter between the lasting tacks and to guide the fastening through the upper and channel lip in a line substantially parallel with the bottom of the last and above the line of the welt stitches, fastening inserting means operating in said nose or throat, means for clenching the fastenings upon the opposite side of the insole rib or channel lip, and means for effecting a relative movement of the clenching means and the nose or throat to clamp the parts to be united before the fastening inserting operation begins.

6. A machine of the class described having, in combination, fastening inserting means constructed and arranged to drive a fastening through the upper and insole channel lip of a lasted shoe, means for clenching the fastening upon the inside of the channel lip and manually controlled means for moving said clenching means toward and away from the fastening inserting means whereby the parts to be united may be clamped and the clenching means brought into operative position before the fastening inserting operation.

7. A machine of the class described having, in combination, fastening inserting means constructed and arranged to drive a fastening through the upper and insole channel lip of a lasted shoe, means for clenching the fastening upon the inside of the channel lip having provision for movement into work clamping relation to the fastening inserting means in advance of the fastening inserting operation, and means operating in advance of the fastening inserting operation for pressing the upper into the angle of union between the channel lip and the feather of the insole.

8. A machine of the class described having, in combination, fastening inserting means constructed and arranged to drive a fastening in a horizontal line through the upper and insole channel lip of a lasted shoe, and means for clenching the fastening upon the inside of the channel lip supported above said inserting means with provision for movement toward and away from said inserting means.

9. A machine of the class described having, in combination, staple forming and inserting means arranged to insert a staple through the upper and insole channel lip of a lasted shoe while these parts are in their original lasted condition, and means constructed and arranged to enter into the angle of union between the feather of the insole and the channel lip for forcing the upper into said angle in advance of the staple inserting operation.

10. A machine of the class described having, in combination, staple forming and inserting mechanism comprising an inside former and an outside former constructed and

arranged to form a staple over the inside former, a staple driver and means projecting from the forward end of said outside former and movable therewith in advance of the operation of the staple driver for pressing into position the stock into which the staple is to be driven.

11. A machine of the class described having, in combination, mechanism for inserting staples, staple forming means comprising an outside former and means for pressing the stock to be operated upon into position to receive the staple projecting from the forward end of said outside former and movable therewith.

12. A machine of the class described having, in combination, mechanism for inserting fastenings constructed and arranged to insert a fastening through the upper and insole channel lip of a lasted shoe and comprising a stationary throat by which the fastenings are guided during the inserting operation, and means for forcing the upper into the angle of union between the channel lip and the feather of the insole in advance of the fastening inserting operation constructed and arranged to form a wall of said throat when the forcing operation is completed.

13. A machine of the class described having, in combination, fastening inserting means constructed and arranged to insert a fastening through the upper and insole channel lip of a lasted shoe, and means for forcing the upper into the angle of union between the channel lip and the feather of the insole before the fastening inserting operation begins, constructed to guide the fastening during the fastening inserting operation in such manner that it is inserted through the upper and channel lip above the path of operation of the needle of the welter.

14. A machine of the class described having, in combination, means for forming a blunt-ended staple, means for inserting said staple through the upper and insole channel lip of a lasted shoe comprising a nose for guiding said staple constructed to enter between the lasting tacks, means for clenching the staple upon the inside of the channel lip and means for wiping the upper over the edge of the last and tucking it into the angle of union between the channel lip and the feather of the insole constructed to position the staple above the path of movement of the needle of the welter.

15. A machine of the class described having, in combination, fastening inserting means constructed and arranged to drive a fastening through the upper and insole channel lip of a lasted shoe, said means comprising a nose constructed and arranged to lift the toe binding wire in order to guide a fastening through the upper and channel lip substantially in line with said wire when

in its normal position, and means for clenching the fastening upon the inside of the channel lip.

16. A machine for attaching an upper to the channel lip or to the shoulder of a sole comprising, in combination, fastening inserting mechanism, means for pressing together the parts to be united before the fastening inserting operation begins, and means arranged to operate upon the said parts while held in the aforementioned means for pressing the said parts tightly together along a line closely adjacent to the line of insertion.

17. A machine for attaching an upper to the channel lip or to the shoulder of a sole, comprising, in combination, fastening inserting mechanism, means for pressing together the parts to be united before the fastening inserting operation begins, and means arranged to operate upon the said parts while held in the aforementioned means for forcing the said parts tightly together along a line closely adjacent to the line of insertion and between the fastening and the body of the sole.

18. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism comprising a stationary nose or throat, a clenching tool constructed and arranged to enter behind the channel lip or in the channel and movable toward the nose or throat to clamp together the parts to be united, and means movable toward said clenching tool for further clamping together the parts to be united closely adjacent to the line of insertion.

19. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, mechanism for inserting fastenings, means for clamping together the parts to be united before the inserting mechanism is actuated and means for exerting a final clamping action upon said parts between the line of insertion and the body of the sole just before the fastening is inserted.

20. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, mechanism for inserting fastenings, means for pressing together above the line of insertion the parts to be united, and means acting upon said parts while held in the aforementioned means for applying additional clamping pressure between the line of insertion and the body of the sole.

21. In a machine of the class described, fastening inserting mechanism including a throat, a fastening clenching tool movable toward said throat to clamp together the parts to be united, and means movable in line with said clenching tool and in a direction opposed to the direction of clamping

movement of said tool for pressing said parts tightly together close to the line of insertion.

22. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism, means for pressing together the parts to be united before the inserting mechanism is actuated constructed and arranged to permit the work to be adjusted freely about one member of said means as it is moved into engagement with the other member.

23. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism, means for pressing together the parts to be united before the inserting mechanism is actuated constructed and arranged to permit the work to be adjusted freely about one member of said means as it is moved into engagement with the other member, and means operating upon the upper while held in the aforementioned means to force the upper into the angle of union between the lip or shoulder and the feather of the sole.

24. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism, manually controlled means for bringing to bear upon the parts to be united pressure sufficient to clamp them in substantially the desired relation to each other, and automatic means for bringing localized pressure to bear upon said parts in the region where the fastening is to be inserted.

25. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism constructed to insert a fastening in a straight line and comprising a fastening guiding nose having one side removed to permit the line of insertion to be brought close to the feather of the sole, and means for closing said side before the fastening is inserted tapered to an edge at its forward end.

26. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism constructed to insert a fastening in a straight line and comprising a fastening guiding nose having one side removed to permit the line of insertion to be brought close to the feather of the sole, and means for closing said side before the fastening is inserted arranged and operating to wipe the upper over the edge of the sole and to tuck it into the angle of union between the lip or shoulder and said feather.

27. A machine for attaching an upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism comprising a stationary nose or

throat, a clenching tool constructed and arranged to enter behind the channel lip or in the channel and normally separated from said nose or throat, and means for moving said clenching tool into work clamping relation to said nose or throat, said parts being so arranged that the work may be adjusted freely to bring it into proper relation to one part after it has been engaged by the other.

28. A machine for attaching the upper to the channel lip or to the shoulder of a sole having, in combination, fastening inserting mechanism comprising a fastening guiding nose shaped to engage the upper, while in its original lasted condition, at a point between successive lasting tacks and in the angle of union between the feather of the sole and the shoulder or lip, a fastening clenching tool shaped to enter behind the channel lip, with respect to said nose, or in the channel, and means for effecting a relative work clamping movement of said nose and said clenching tool before the fastening inserting mechanism is actuated.

29. A machine for attaching an upper to the channel lip or to the shoulder of a sole, having, in combination, fastening inserting mechanism constructed to insert a staple of fine wire, and means for preparing the parts to be united for the staple inserting operation comprising means for clamping said parts together before the inserting mechanism is actuated and means for exerting a final clamping action upon said parts close to the line of insertion just before the staple is inserted.

30. A machine for attaching an upper to the channel lip or to the shoulder of a sole, having, in combination, fastening inserting mechanism comprising a fastening guiding nose shaped to engage the upper while in its original lasted condition at a point between successive lasting tacks and in the angle of union between the feather of the sole and the shoulder or lip and having its fastening guiding passage separated from the upper over the feather by a thin wall, and a fastening clenching tool shaped to enter behind the channel lip with respect to said nose or in the channel.

31. A machine for attaching an upper to the channel lip or to the shoulder of a sole, having, in combination, fastening inserting mechanism comprising a fastening guiding nose shaped to engage the upper while in its original lasted condition at a point between successive lasting tacks and in the angle of union between the feather of the sole and the shoulder or lip and having its lower wall reduced to an edge at the delivery end, and a fastening clenching tool shaped to enter behind the channel lip, with respect to said nose, or in the channel.

32. A machine for attaching an upper to the channel lip or to the shoulder of a sole,

having, in combination, fastening inserting mechanism comprising a fastening guiding nose which is so narrow at its delivery end and so shaped that it will engage the upper while in its original lasted condition at a point between successive lasting tacks and in the angle of union between the feather of the sole and the shoulder or lip and having its fastening guiding passage separated from the upper over the feather by a thin wall.

33. A machine for attaching an upper to the channel lip or to the shoulder of a sole, having, in combination, staple inserting mechanism constructed to insert a staple of fine wire and comprising a staple guiding nose shaped to engage the upper while in its original lasted condition at a point between the successive lasting tacks and in the angle of union between the feather of the sole and the shoulder or lip, said nose having its staple guiding passage separated from the upper over the feather by a thin wall, and a thin staple driver guided in said passage and sliding upon said wall, said driver having upon its upper face a stiffening rib and

said nose being provided with a guiding groove for said stiffening rib which opens into said passage.

34. In a machine for attaching an upper to the channel lip or to the shoulder of a sole, a fastening guiding nose comprising relatively movable parts, a cooperating fastening clenching tool, means for effecting a relative movement of said clenching tool and one of said relatively movable parts to press together the parts to be united before the fastening inserting operation begins, and means for thereafter effecting a relative movement of said clenching tool and the other of said relatively movable parts to exert a further pressing action upon the parts to be united just before the fastening is inserted.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILFRED J. DREY.

Witnesses:

ROBERT MORRIS ZIEGLER,
H. DORSEY SPENCER.