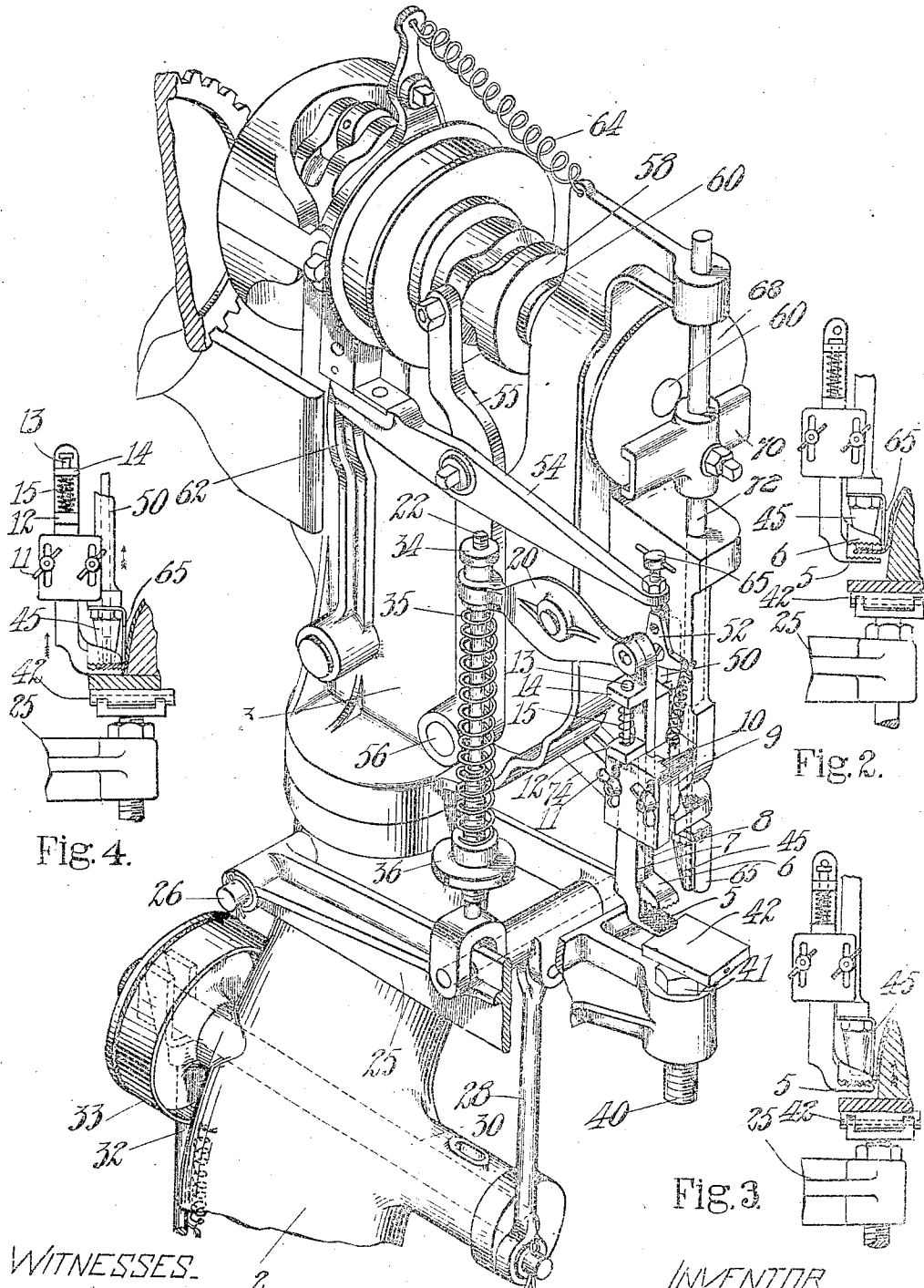


W. A. BOND.
LASTING MACHINE.
APPLICATION FILED MAR. 17, 1909.

1,055,256.

Patented Mar. 4, 1913.



WITNESSES.
Edith C. Hollbrook
Elizabeth C. Cripe

Fig. 1.

INVENTOR.
William A. Bond
By his Attorney,
Nelson W. Howard

BEST AVAILABLE COPY

UNITED STATES PATENT OFFICE.

WILLIAM A. BOND, OF LYNNFIELD, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

LASTING-MACHINE.

1,055,256.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed March 17, 1909. Serial No. 484,035.

To all whom it may concern:

Be it known that I, WILLIAM A. BOND, a citizen of the United States, residing at Lynnfield, in the county of Essex and State of Massachusetts, have invented certain Improvements in Lasting-Machines, 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 shoe lasting machines and is here embodied in a machine for lasting shoes having an outturned upper attached to a projecting edge of the shoe sole as distinguished from shoes having an intumed upper folded inwardly upon the sole and fastened there under the last.

An object of this invention is to provide an organized machine including means for engaging the outturned upper, means for engaging the sole, and preferably means for pressing the upper toward the sole between the first mentioned means and the side of the last, together with mechanism for relatively moving said means to stretch the upper over the last and lay it upon said projecting edge of the sole, and means for securing the upper while so laid.

This invention in the general organization of the machine and in the coöperative action of different devices, as well as in new constructions for the purposes contemplated, presents numerous features of novelty.

One feature is found in the form or arrangement of the grippers with relation to the other parts of the machine to lay the upper substantially flat upon the top face of the projecting edge of the sole, to effect stretching of the upper. This arrangement comprises a jaw which is stationary during the gripping and pulling, a jaw yieldingly moved toward the stationary jaw and a shoe support that is moved simultaneously with the movable jaw but in the opposite direction to effect the stretching of the upper. The first mentioned jaw is adjustable and by varying its relation to the shoe support the length or extent of the pull can be varied.

A further feature consists in provision for automatically starting the fastening device

into operation after the upper has been pulled. This is effected by a continued upward movement of the shoe support, taking with it for this purpose the grippers which continue to hold the upper; and forcing the upper against the nozzle which is connected to starting means adapted to clutch the driver and the tack feeder. It is contemplated that the upper which is lasted and fastened by this machine shall subsequently be further fastened by a seam located in the angle between the side of the shoe and the outturned flange, and with this in view the presser is located to crease the upper into the said angle and hold it there while the tack is being driven so that the tack fastens the upper with enough stock inside the tacking line to enable the line of stitches to be run without further stretching the upper.

Another characteristic of importance is that while the upper is pulled substantially the same distance at each operation of the grippers it is not tacked when and where it is being pulled but the tacker is located between the last driven tack and the grippers and fastens the upper at a point where it has had opportunity to sag back slightly if it has been pulled too tight. This arrangement provides that the tension under which the upper is fastened shall be approximately equal at different parts of the shoe.

These and other features of the invention, including certain details of construction and combinations of parts, will appear more fully in connection with the following description of a machine embodying the invention in the best form now known to me.

Figure 1 is a perspective view of the machine which will be described for the purpose of explaining my invention, although it is to be understood that there is implied, as to the protection sought, no limitation to this or to a similar embodiment of my invention; Fig. 2 is a detail showing the parts in the act of gripping; Fig. 3 is a detail showing the parts in the act of pulling; Fig. 4 is a detail showing the parts in the act of raising the nozzle to start the tacker.

The frame of the machine comprises a post 2 which may advantageously extend to the

floor and support the fulcrum of a starting treadle not shown, and a head 3 which supports the tacker and associated parts and the grippers. The grippers include jaws 5 and 6 having horizontal gripping faces and vertical shanks 7 and 8 which are guided between the front bracket 9 of the head and a cap 10 which is adjustably held thereon by clamping screws 11 leading through slots in the cap. The jaw 5 has a head 12 from which extends a stem 13 that is guided in a lug 14 projecting from the shank of jaw 6 and between said head and lug is a spring 15 by which the jaw 5 is normally held down in stationary position. The altitude of jaw 5 can be varied by adjusting the cap 10 upon which the head 12 of the shank rests, and this altitude relatively to the work rest determines, as will later be explained, the extent of the upper pulling movements of the machine.

The shank 8 of jaw 6 is extended above the lug 14 and pivoted to a lever 20 fulcrumed on the head of the machine and having in its rear end an eye through which passes a vertical rod 22. The rod has a yoke on its lower end by which it is secured to a lever 25 pivoted at the rear at 26 and connected by a link 28 with an eccentric pin on the shaft 30 adapted to be clutched to a continuously running pulley 33 by actuation of the treadle rod 32. The rod 22 has an adjustable nut 34 above the lever 20 by which the position of the jaw 6 can be changed to cause it to open more or less. In practice it is not necessary to make the jaws open widely because the stock is not necessarily withdrawn from them and reinserted for each operation of the machine, but may be only released to permit it to be fed along lengthwise of its edge between the jaws. A spring 35 surrounds the rod 22 and rests upon an adjustable collar 36 on the rod. It is through this spring that the lever 20 is rocked to close the jaw 6 on the upper when the rod is raised, and the spring is compressed to increase the grip after the jaws have come together.

The lever 25 has a threaded eye in its front end in which a work rest stem 40 is threaded and locked by a nut 41. This stem has a head on which a work plate 42 is pivoted to have a limited rocking movement. This work plate has a sole engaging face that extends under the grippers and also back thereof, to sustain the work under the tacker nozzle 45 and through the work to lift the nozzle for starting the driver.

The tacker nozzle is movable vertically with a slide 50 to the upper end of which is pivoted the block 52 located under the front end of a horizontal lever 54. This lever is fulcrumed on a vertical lever 55 pivoted to the head at 56 and having a roll in its upper end that stands in a groove of a

cam block 58 on the shaft 60. The heel end of the horizontal lever has a shoulder that normally stands against a second vertical lever 62 which is the clutch controlling lever for the shaft 60 and is pulled forwardly by the spring 64 to close the clutch and start the tacker when the horizontal lever is tipped to disengage its heel from the clutch lever. The contact of the block 52 with lever 54 for this purpose is made by the adjustable stop screw 65. The nozzle should be located above the gripping plane in order not to interfere with the manipulation of the shoe. The grippers are accordingly made vertically movable together, under the upward pressure of the work support transmitted through the shoe stock until the shoe stock engages and lifts the nozzle far enough to trip the driver. To this end the shank 7 as well as the shank 8 is movable vertically between the bracket 9 and the cap 10 as appears from the raised position of the head 12 in Fig. 4. A blade 65 secured to the nozzle extends downwardly to the lower face thereof in a position to press or crease the upper into the angle between the side of the last and the top face of the sole adjacent to the point where the tack is to be driven. The final upward movement of the shoe with the grippers for engaging the nozzle gives this blade a final thrust into the angle after the pulling of the upper has been completed. This blade serves as a side rest for the last or shoe. The shaft 60 carries on its front end the disk 68 having an eccentric stud that stands in the grooved block 70 fast on the driver bar 72. The tacks are fed from any convenient source such as the raceway 74.

In the use of the machine the upper materials and the sole are assembled upon the last as is usual in making this type of shoes, the upper materials usually, although not necessarily, having been molded at the toe and heel to give them the shape of the last and to form the outturned flange. The shoe is then presented as shown in Fig. 2 with the sole resting on the work table 42 and the flange of the upper between the gripper jaws 5 and 6 as in Fig. 2. The treadle is depressed to actuate the clutch rod 32 whereupon the lever 25 begins to rise, and its movement is transmitted yieldingly through the spring 35 and reversed in direction by the lever 20 to depress the jaw 6 after which the spring 35 takes up the rest of the movement while it tightens the grip on the stock. The rise of the lever 25 also raises the work plate and the shoe, forcing the last upwardly into the gripped upper as in Fig. 3 until the top face of the sole edge engages the lower face of jaw 5. In these movements the blade 65 has pressed the upper against the side of the last and down in the angle adjacent to the tacking point. Now the gripper jaws themselves are lifted

to permit the shoe to engage and raise the nozzle and cause the tripping of the driver clutch after which the fastening tack is inserted and the moving parts return to starting position. The operator can feed the shoe along to the next gripping point and the operation will be repeated until the lasting is completed step by step, or, by removing his foot from the starting treadle, he can bring the machine to rest at any time with the parts in any position. The purpose of the several adjustments will be clear from the description thereof.

I have herein described and illustrated a tacker as the mechanism for fastening the upper and in many of the claims the term tacker is employed to designate the fastening mechanism as an element of the combination. It is to be understood, however, that where the context permits and the state of the art allows, the term tacker is to be construed as covering any suitable fastening mechanism whether it secures the upper by individual fastening devices or by stitches.

Having explained the nature of this invention and fully described a preferred embodiment thereof I claim as new and desire to secure by Letters Patent of the United States:—

1. In a machine for lasting shoes having an outturned flange of upper attached to a projecting edge of the sole, the combination with suitable actuating mechanism, of grippers formed and arranged to seize the upper and hold it substantially flat relatively to the top face of said projecting edge of the sole and means for effecting relative movement of the shoe and grippers to lay the upper upon the top face of the sole.

2. A lasting machine having in combination, suitable means for working an upper over a last, a shoe rest, a tacker adapted to be started by engagement of the shoe therewith, and automatic means for actuating the rest to move the shoe to effect such tacker starting engagement.

3. A lasting machine having in combination, lasting means, a normally inoperative tacker, a shoe rest, mechanism for actuating it in time relation to the operation of the lasting means to move the shoe, and means for starting the tacker into operation to fasten the material overworked by the lasting means upon a movement of the shoe by the shoe rest.

4. A lasting machine having in combination, grippers, a normally inoperative tacker, a shoe rest, means for automatically actuating the rest to move the shoe relatively to the tacker and the grippers, and means for starting the tacker upon a movement of the shoe by the shoe rest.

5. A lasting machine having in combination tack driving mechanism, including a

reciprocating driver; and grippers having gripping faces pointing laterally, substantially perpendicularly to the driver, for grasping the edge of the upper; and means for moving the grippers toward and from the tack driving mechanism in lines longitudinal of the reciprocation of the driver.

6. A lasting machine having in combination tack driving mechanism, normally open grippers, a shoe sustainer, to receive the bottom of the sole and means whereby the grippers automatically close upon the upper and tension it upon a bodily movement of the shoe toward the grippers caused by engagement of the shoe sustainer with the shoe.

7. A lasting machine having a shoe rest, grippers and a fastening mechanism arranged in series and means for moving the rest and shoe vertically to effect pulling of the upper by the grippers and then to advance the rest, shoe, and grippers together into operative relation to the fastening mechanism.

8. A lasting machine having grippers, tack driving mechanism, a shoe rest arranged to support the shoe against the impact of the tack driver, and means operating in time relation to the gripper operation for actuating the rest to move the shoe relatively to the grippers to cause the upper to be stretched.

9. A lasting machine having grippers, tack driving mechanism, a shoe rest, and means operating in time relation to the upper seizing movement of the grippers for actuating the rest to move the shoe with relation to the grippers to cause the upper to be stretched and then to move the shoe farther into operative relation to the tacking mechanism, said rest being arranged to support the shoe against the impact of the tack driver.

10. A lasting machine having grippers, tack driving mechanism, a shoe rest arranged to support the shoe against the impact of the tack driver, means for relatively actuating the rest and the grippers to cause the upper to be stretched, said machine having provision for a movement of the rest and the grippers together to present the stretched upper to the tacker, and power mechanism for actuating said parts in time relation.

11. A lasting machine having a shoe rest, grippers and fastening mechanism arranged for operation consecutively and means for actuating the rest to move the shoe toward the grippers and then to move the shoe and grippers toward the fastening mechanism.

12. A lasting machine having in combination grippers comprising a normally stationary jaw, a movable jaw, means for closing the movable jaw on the other jaw, moving the last to put the upper under tension

and then moving the shoe and the gripper jaws into operative relation to the fastening mechanism.

13. A lasting machine having in combination grippers, a shoe rest, and a lever and connections from said lever to close the grippers and to actuate the shoe rest to move the shoe for putting the upper under strain.
14. A lasting machine having in combination grippers, a shoe rest, means for actuating the rest to move the shoe relatively to the grippers to pull the upper, and connections from said rest actuating means to close the grippers during the first part of the movement of the rest.
15. A lasting machine having in combination grippers, and suitable mechanism for causing the upper to be gripped and pulled including a spring through which the gripping is effected, said machine having provision for positively increasing the pressure of said spring during the pulling operation.
16. A lasting machine having in combination grippers, a last rest formed and arranged to uphold the shoe and means for moving the last rest and thereby the last toward the grippers and simultaneously actuating the grippers relatively to each other substantially as and for the purpose described.
17. A lasting machine having in combination grippers constructed and arranged with gripping faces substantially parallel to the last bottom to engage an outturned flange of an upper at the side of a last above the last bottom, means for closing the grippers, means for relatively moving the grippers and the last substantially perpendicularly to the plane of the last bottom to stretch the upper over the last, and means for fastening the upper to a projecting edge of the shoe sole.
18. In a machine arranged to last a stitch-down shoe right side up, a shoe rest, grippers comprising a lower jaw located above the rest for the shoe to be moved up to it in stretching the upper, an upper jaw movable to grip the upper and a tacker operative at a higher level than the jaws and toward which the shoe and the jaws together are raised after the upper has been pulled.
19. In a machine arranged to last a stitch-down shoe right side up, a shoe rest, grippers comprising a lower jaw located above the rest, a cooperating jaw, a tacker operative at a higher level than the jaws and means for actuating the rest to move the shoe up to the grippers to effect stretching of the upper and then to move the shoe and the grippers together into position for the tacker to fasten the upper.
20. A lasting machine comprising a shoe rest formed and arranged to uphold the shoe, grippers, and a tacker located in different planes vertically, and means for actuating the rest to move the shoe in a right line first to cause the grippers to pull the upper and then to cause the tacker to fasten the upper.
21. A lasting machine having in combination grippers, a shoe rest, and means for actuating the rest toward the grippers to effect stretching of the upper, said machine having provision for adjusting the grippers toward and from the rest to vary the stretching movement.
22. A lasting machine having in combination a shoe rest, and grippers located above the rest and toward which the rest moves the shoe for effecting stretching of the upper, said machine having provision for adjusting the grippers from and toward the rest to vary the stretching movement.
23. A lasting machine having in combination a shoe rest, means for imparting thereto a predetermined movement, and grippers located above the rest and toward and against which the rest moves the shoe to pull the upper and lay it in position to be fastened, said machine having provision for adjusting the grippers toward and from the rest to vary the effective pulling movement and for permitting the grippers to move with the rest after the completion of the stretching movement.
24. A machine for lasting shoes having a projecting sole to receive an outturned flange of upper, having, in combination, a rest for the bottom of the last, grippers arranged for movement wholly on the same side of said rest as that on which the last is located, means for actuating the grippers and means arranged for inserting fastenings perpendicularly to the projecting portion of the sole.
25. A lasting machine having rests for the side and the bottom of a last, of grippers having only a movement perpendicularly to the last bottom and in a path entirely outside the last, and means for actuating the grippers.
26. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising a rest for the bottom of the last, grippers movable perpendicularly to the last bottom and having jaws formed to lay the upper flat upon the projecting portion of the sole.
27. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising an abutment for the projecting edge of the sole, grippers for engaging the upper, and means for relatively actuating said abutment and the grippers to lay the upper upon the top face of said projecting edge of the sole.
28. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising an abutment for

the projecting edge of the sole, grippers for engaging the upper, and means for relatively actuating said abutment and the grippers to stretch the upper and lay it substantially flat on the projecting edge of the sole, and means to fasten the upper while it is so held.

29. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising an abutment for the projecting edge of the sole, grippers for engaging the upper and means for relatively actuating said abutment and the grippers to lay the upper upon the top face of said projecting edge of the sole, and a device to force the upper into the angle formed by the side of the last and said top face of the sole.

30. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising means for positioning the shoe, grippers arranged to lay the upper substantially flat on the projecting edge of the sole, and a presser for forcing the upper into the angle between the top face of the sole and the side of the last.

31. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising means for positioning the shoe, grippers arranged to lay the upper substantially flat on the projecting edge of the sole, a presser for forcing the upper into the angle between the top face of the sole and the side of the last, and means for securing the upper in lasted position.

32. A lasting machine having in combination grippers, a tacker, power operated means for relatively actuating the grippers and the last to pull the upper and lay it into position to be fastened and then while holding the upper so positioned to move the shoe into the field of operation of the tacker.

33. A lasting machine having in combination, grippers, a tacker, means for moving the shoe with relation to the grippers to pull the upper and for further moving the shoe together with the grippers in the same direction to position the shoe in the field of operation of the tacker.

34. A lasting machine having in combination grippers and a tacker, said machine being constructed and arranged to effect movement of the shoe vertically with relation to the grippers to pull the upper and then further in the same direction to position it for the operation of the tacker.

35. A lasting machine having in combination grippers and a tacker, said machine being constructed and arranged to effect movement of the shoe vertically with relation to the grippers to pull the upper and then further in the same direction to trip the tacker, and means for actuating the tacker when it is tripped.

36. A lasting machine having in combina-

tion grippers, a tacker, and a shoe rest arranged in a common vertical plane and means for actuating the rest to move the shoe relatively to the grippers to pull the upper and then to move the shoe and the grippers into operative relation to the tacker while the grippers continue to hold the upper.

37. A lasting machine having in combination, grippers, a shoe rest, means for relatively actuating said parts to cause the upper to be stretched over the last step by step by repetition of the operation at different points successively, and a fastening means located on the rear side of the grippers and permanently alined therewith leaving the upper in advance of the grippers free for manipulation thereby.

38. A lasting machine having in combination, grippers, a shoe rest, means for relatively actuating said parts to cause the upper to be stretched over the last step by step by repetition of the operation at different points successively, and fastening mechanism arranged to secure the upper between the gripping point and the last previous securing point and in a line connecting said points.

39. A lasting machine having in combination means for working an upper into an angular formation between the side of the last and the projecting edge of the sole of the shoe, fastening mechanism and a blade carried by the upper working means and cooperating with said mechanism to force the upper vertically down into said angle before the fastening is effected.

40. A machine for lasting stitchdown shoes having in combination means for working the upper into an angular formation between the side of the last and the projecting edge of the sole of the shoe, fastening mechanism, and a blade carried by said upper working means and acting substantially parallel to the fastening inserting movement to force the upper into said angle before the fastening is inserted.

41. A lasting machine having, in combination, grippers for working an upper into an angular formation of the shoe, a tacker arranged in the rear of the grippers, and a blade between which and the shoe there is relative movement in a direction substantially perpendicular to the plane of the shoe bottom to press the upper into said angle adjacent to the tacker and hold it there during the tacking operation, said tacker being positioned to insert tacks in a direction parallel to the direction of the relative movement of the blade and shoe.

42. A lasting machine having in combination means for working an upper over a last, a tacker for fastening the upper, and a fixed presser blade depending at the front side of the tacker with its acting edge sub-

stantially in the horizontal plane of the work engaging surface of the tacker.

43. A machine for lasting a shoe having a projecting edge to receive an outturned flange of the upper, comprising means for working the upper into position to be fastened to the top face of said projecting edge, fastening mechanism operating to insert fastenings perpendicularly to the plane of said top face and a blade to engage the upper between the fastening point and the side of the last.

44. A machine for lasting a shoe having a projecting edge to receive an outturned flange of the upper, comprising means for working the upper into position to be fastened to the top face of said projecting edge, a tacker operating to insert fastenings perpendicularly to the plane of said top face and a presser blade located between the tacker and the side of the last to press the upper in the angle in advance of the insertion of the fastening.

45. A lasting machine having, in combination, grippers, a tacker, means to cause the grippers to pull the upper and to present the shoe to the tacker, said tacker including means controlled by the presentation of the shoe to cause a tack to be inserted.

46. In a lasting machine, a tacker including a nozzle, grippers movable longitudinally of the nozzle, means for holding the grippers normally open, and means for closing the grippers and moving the shoe to the nozzle.

47. In a lasting machine, an automatic tacker including a nozzle, grippers movable longitudinally of the nozzle, means for holding the grippers normally open, and one mechanism for closing the grippers and moving the shoe to the nozzle.

48. In a lasting machine an automatic tacker including a nozzle movable to start the tacker, grippers movable longitudinally of the nozzle, means for holding the grippers normally open, and means for closing the grippers and moving with the shoe against the nozzle to start the tacker.

49. A lasting and tacking machine having in combination lasting instrumentalities, power driven means for actuating them to pull an upper over a last, and a normally inoperative tacker so arranged that it can be started only on presentation of the work thereto during the operation of the lasting instrumentalities.

50. A lasting and tacking machine having in combination, lasting instrumentalities, power driven means for actuating them to pull an upper over a last, and tack driving means depending upon the presence of a shoe in the lasting instrumentalities for starting said tack driving means.

51. A lasting and tacking machine having

in combination, lasting instrumentalities, power driven means for actuating them to pull an upper over a last, tack driving means, and separate actuating mechanism therefor arranged to be rendered operative only when a shoe is actually being operated upon by the lasting instrumentalities.

52. A lasting and tacking machine having, in combination, grippers, power driven means for relatively actuating the grippers and last to seize an upper and to tension it over the last, a tacker, and independently controlled means for actuating the tacker to fasten the tensioned upper, said parts being constructed and arranged to cause the tacker to be started only when the stock is in fastening receiving position under the tacker.

53. In a machine for lasting shoes having an outturned flange of upper attached to a projecting edge of the sole, the combination with suitable actuating mechanism, of grippers formed and arranged with gripping faces substantially parallel to the top face of the sole to receive a flange of upper, and means for relatively actuating said grippers and the last to stretch the upper with the flange in position to be fastened to said top face of the sole.

54. A machine for lasting a shoe having a projecting sole to receive an outturned flange of the upper, comprising an abutment for the projecting edge of the sole, grippers having gripping faces extending substantially parallel with the top face of the sole, means for relatively actuating the abutment and the grippers to tension the upper, said parts being arranged to hold the upper under tension with the flange over the top face of the sole, and means for fastening the flange to said face of the sole.

55. A stitch down lasting machine having, in combination, a rest for the projecting margin of a shoe sole, grippers to hold the margin of the upper relatively to said margin of the sole, a presser, and means for relatively operating the presser and said rest to bring the sole margin and the marginal portion of the upper that is located between the grippers and the side of the last into suitable relation to be fastened together.

56. A stitch down lasting machine having, in combination, a rest for the projecting margin of a shoe sole, grippers to hold the upper relatively to said margin of the sole, a presser, means for relatively operating the presser and said rest to bring the sole margin and the marginal portion of the upper that is located between the grippers and the side of the last into suitable relation to be fastened together, and means to fasten the upper to the margin of the sole while said upper and sole are maintained in such relation.

57. A stitch down lasting machine having,

in combination, a work rest for the projecting margin of a shoe sole, grippers arranged to seize the projecting margin of the shoe upper, a presser with which the rest cooperates in working the upper into position to be secured to the projecting margin of the shoe sole while the upper is held by the grippers, and means for securing the upper in said position.

58. A stitch down lasting and fastening machine having, in combination, means for fastening the upper to the sole, and grippers arranged to hold the margin of the upper relatively to the sole while the fastening means secures the upper to the top face of the sole.

59. A lasting machine having, in combination, means for working an upper into an angular formation between the side of the last and the projecting edge of the sole of the shoe, and fastening mechanism acting in said angle and cooperating with said means to force the upper down into said angle before the fastening is effected.

60. In a stitch down lasting and fastening

machine, the combination with a work rest to be engaged by the tread face of the sole margin, and grippers that hold the margin of the upper relatively to the sole while fastening means secures the upper to the top face of the sole, of said fastening mechanism operating as described.

61. A stitch down lasting and fastening machine, having means for seizing and holding a portion of the upper relatively to the projecting margin of the sole, means cooperating therewith for pressing the upper into the angle between the side of the last and the projecting margin of the sole, and means for inserting fastenings through the upper and the sole margin for securing said upper under tension to the top face of the sole margin.

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

WILLIAM A. BOND.

Witnesses:

CHESTER E. ROGERS,
LEONARD M. JOHNSON.