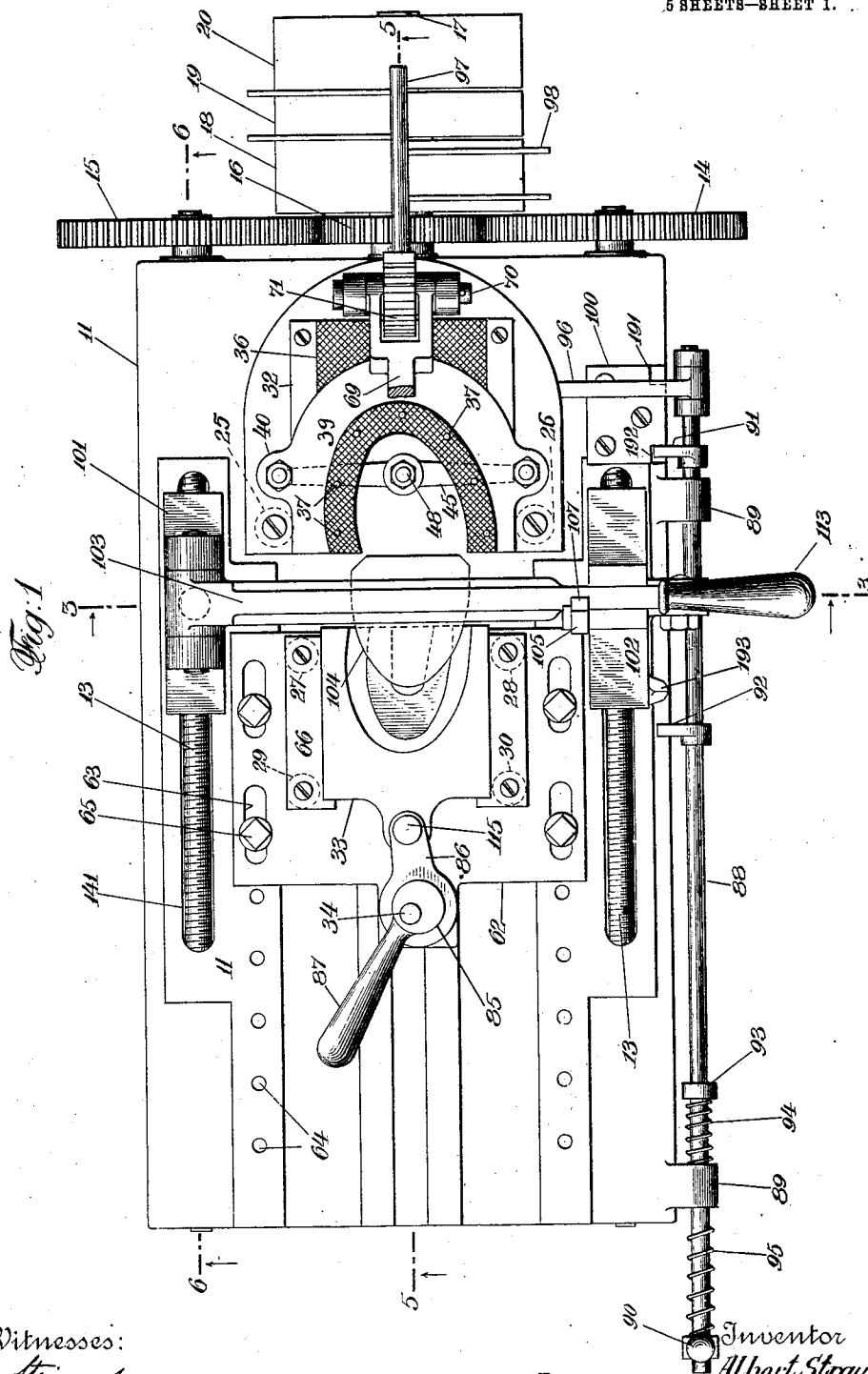


A. STRAUB.
VAMP AND QUARTER FORMING MACHINE.
APPLICATION FILED MAR. 29, 1909.

965,046.

Patented July 19, 1910.

5 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.

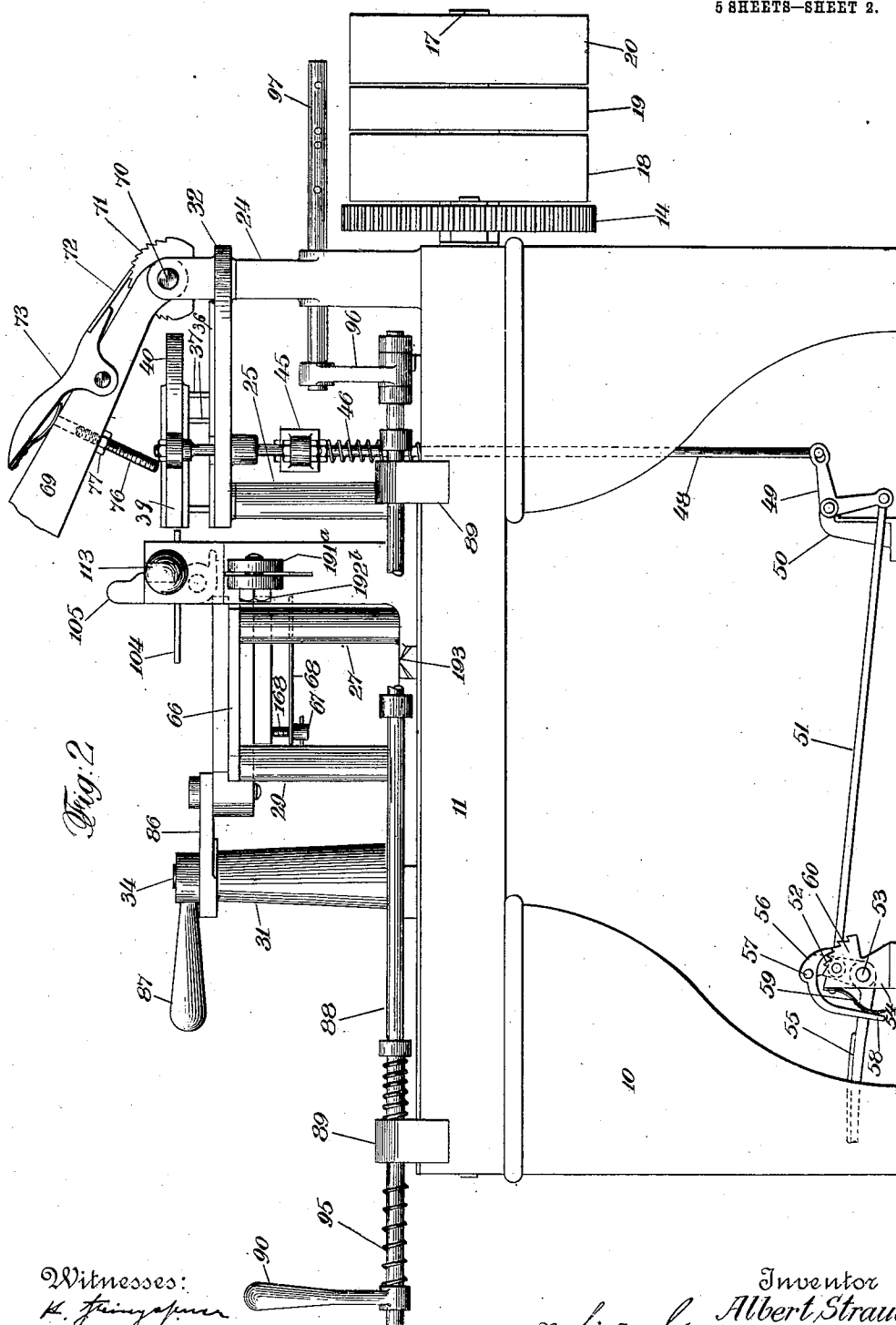


Fig. 2.

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5 SHEETS—SHEET 3.



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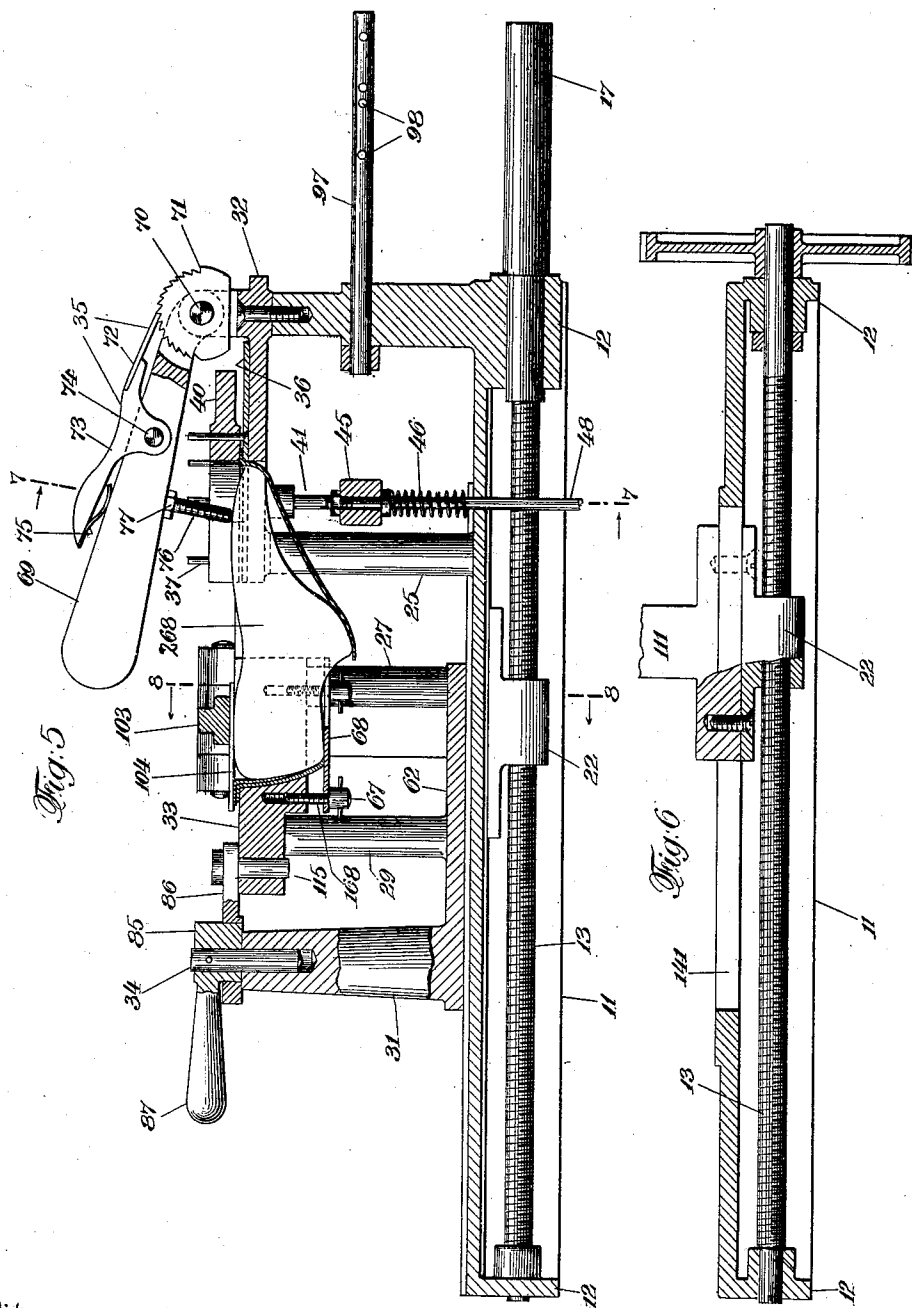
Joseph & Joseph

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5 SHEETS—SHEET 4.



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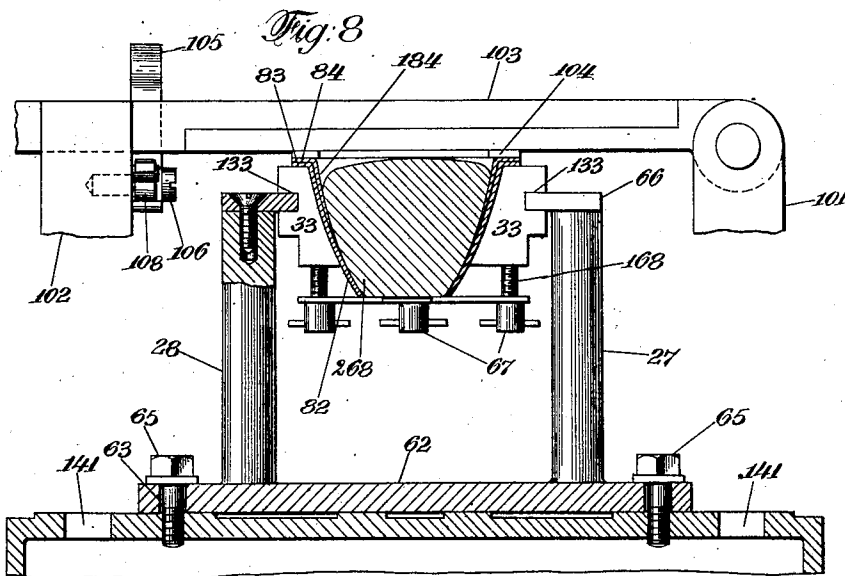
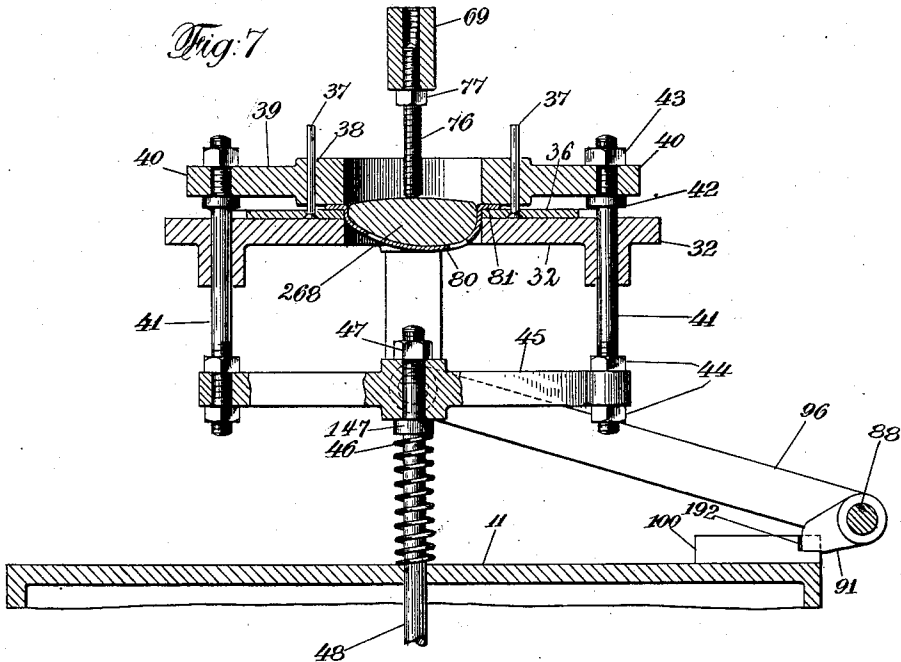
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6 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

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VAMP AND QUARTER FORMING MACHINE.

965,046.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT STRAUB, a citizen of the United States of America, residing in New York, in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Vamp and Quarter Forming Machines, of which the following is a specification.

This invention relates to vamp and quarter-forming machines, and has for its object to provide a machine whereby a vamp and quarter may be formed by means of an improved machine so as to greatly facilitate the manufacture of shoes.

The object of the invention is further to provide means of making special vamps and quarters, with counters attached, differing from those used hitherto, in that the flanges are bent outwardly instead of inwardly, by means of which special vamps the manufacture of shoes and sandals is simplified and improved, resulting in a better and cheaper shoe than was possible heretofore. For this purpose my invention consists of a vamp and quarter-forming machine comprising means for forming the vamps and quarters of a shoe in one continuous operation, and the invention consists further of the combination of vamp-forming means, and quarter and counter-forming means; and the invention consists further of certain novel features and combination of parts which will be more fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan-view of my improved machine, Fig. 2 is a side-view of the same, Fig. 3 is an end-view of the same, Fig. 4 is a detail view of a bar-clamping device used in my improved machine, Fig. 5 is an enlarged detail view of parts of my machine, taken on line 5—5 of Fig. 1, and showing a last in position, and the vamp as also the quarter with counter, with outwardly projecting flanges, Fig. 6 is a detail view of a spindle and engaging member, Fig. 7 is a vertical transverse section, taken on line 7—7 of Fig. 5; and Fig. 8 is a vertical transverse section, taken on line 8—8 of Fig. 5.

Similar characters of reference indicate corresponding parts.

Referring to the drawings, and more particularly to Figs. 1, 2 and 5, a pedestal 10

having a table 11 is provided with downwardly projecting flanges 12 which guide spindles 13 to the ends of which, gear-wheels 14 and 15 are secured which mesh with a gear-wheel 16 secured to a shaft 17 having a driving pulley 18, a loose pulley 19 and a reverse pulley 20 thereon. The table 11 is provided with supporting posts 24, 25, 26, 27, 28, 29, 30 and 31, the posts 24, 25, and 26, supporting the vamp-holding plate 32, and also a last-holding device 35, the posts 27, 28, 29 and 30, supporting the quarter-forming plate 33, and the post 31 supporting an eccentric mechanism 34.

The vamp-holding plate 32 has secured to it an additional plate 36 having a plurality of guide-posts 37 extending upwardly therefrom so as to engage guide-holes 38 of a movable vamp-clamping plate 39 with extensions 40 which are engaged by screw-bolts 41 having flanges 42 with lock-nuts 43, between which, the extensions 40 are held in position. The lower or free ends of these bolts 41 support a bar 45 arranged so as to be adjustable between nuts 44, which engage the screw-threaded portion of the bolts, which bar 45 is connected with the end of a rod 48 by means of a collar 147 and lock-bolt 47. This bar 48 is connected, as shown in Fig. 2, to a bell-crank lever 49 pivoted on a support 50 secured to the floor of the room. The bell-crank lever 49 is connected by a link 51 with a lever 52 pivoted at 53 and forming part of a foot-treadle 55. The free end of the lever-arm 52 has pivoted thereto at 57 a pawl 56, having a treadle part which is separated from the support 54 by a spring 59. The support 54 is provided with a ratchet 60 which is engaged by the pawl 56. By pressing downwardly on the treadle 55 the vertical bar 48 is pulled downwardly and with it the frame 45 and its vamp-clamping plate 39. By this movement the pawl 56 is carried along the ratchet 60 and holds the vamp-clamping plate 39 in position, so as to tightly clamp the vamp between it and the plate 32. In order to release the vamp the treadle 58 is pressed against the action of the spring 59 whereby the pawl becomes released from the ratchet so that a spring 46 interposed between the collar 147 of the bar 45 and the table 11, is enabled to raise the vamp-clamping plate 39 vertically upward away from the plate

32, being guided in so doing by the guide-posts 37. The outwardly extending flange 81 of the vamp 80 is clearly shown in Fig. 7.

The quarter-forming is brought about by placing the quarter 82 with counter 184 in position, against a quarter-support 33, provided with guide-slots 133 engaged by guides 66 of posts 27, 28, 29 and 30. A carriage 62 is adjustable and held in position by bolts 65 passing through slots 63 of the plate 62 and entering spaced holes 64 of the table 11. The different positions of the carriage 62 may be thereby regulated depending upon the size of the shoe to be operated upon. To regulate also the depth of the quarters and to assist in the support thereof, a plate 68 is adjustable by thumb-screws 67, the screws 168 of which engage the quarter-support 33. This support 33 is longitudinally movable so as to be further adjustable by an eccentric mechanism 34 consisting of a link 86 engaged by an eccentric 85 pivoted at 115 to the post 31 and having a handle 87. A last 268 is placed in position after the vamp edges are clamped and the quarter with counter thereon supported, and has its toe entering the toe-portion of the vamp and the heel of the last abutting the heel portion of the quarter. The toe of the last is held in position by the last-holding device 35 which consists of a handle-lever 69 one end of which is pivoted to the post 24 at 70 and has secured thereto a ratchet 71 engaged by a pawl 72 of a pivoted hand-device 73 in turn pivoted at 74 and provided with a spring 75. The hand-lever 69 is provided with a screw-threaded bolt or spindle 76 engaging screw-threads in the hand-lever 69 which spindle has an adjusting nut 77 whereby its position may be regulated, the end of the spindle resting on the toe-portion of the last. The movement of the handle and eccentric will bring about the movement of the quarter-support 33, and this abutting against the last 268 will force it into the vamp and form it so as to make a vamp, with outwardly extending flanges.

A rod 88 with a handle 90, shown in Figs. 1 and 2, is guided in extensions 89 of the table 11 and has dogs 91 and 92 adapted to engage notches 191 and 192 of a plate 100 and also a movable cam 193 on a support 102. A collar 93 is arranged on the rod 88 between which and one bracket 89 a spring 94 is interposed, while a second spring 95 is interposed between the bracket 89 and the handle 90. Secured to the end of the rod 88 is a bar 96 which supports a rod 97 having belt-guiding rods 98 secured thereto. By the shifting of the rod 88 the belt may be shifted accordingly. In the position of the rod 88, shown in Fig. 1, the parts are in the position corresponding to the commencement of the longitudinal forward movement of the bar 103, which continues until the bar

103 with its plate 104 has completed its work of turning over the edges of the quarter 82 and counter 184 so as to form outwardly projecting flanges 83 and 84 when the dog 92 is engaged by the cam 193, and thereby the dog 91 released from the notch 192 of the plate 100, so that the spring 94 will force the rod longitudinally along the frame of the machine, and throw the belt on to the reverse pulley 20. This will cause the bar 103 to be returned to its original position.

The bar 103 is pivoted at one end on a support 101 and is supported at the other end by a support 102 being held in position by a catch mechanism consisting of a lever 105 pivoted at 106 and acted upon at one end by a spring 108 and having a lug 107 engaging the bar 103. The supports 101 and 102 have pintles 109 which are adjustable by means of ears 191^a engaged by a screw-bolt 192^b. By the vertical adjustment of these pintles the bar with its plate may be raised or lowered so as to be adapted to different heights of quarters. The machine is equally applicable to right or left vamps, depending on the position of the plate 39, which may be reversible by the removal of the nuts 43.

The operation of my improved device is as follows: The vamp and quarter joined together in the usual course of manufacture is placed in position on the plates 32, 33, and the vamp on the plate 32 with its edges clamped between the plate 32 and the plate 39, while the quarter with the usual counter attached is placed in the plate 33. The plate 68 is then adjusted by the thumb-screw 67 so as to place the quarter with counter to the proper height so as to have the vamp and quarter project the required amount from the top of the plate 33. The carriage 62 is then longitudinally adjusted, so that the vamp and quarter fit in properly between the plates 32 and 33. A last 268 is placed in position against the vamp and quarter and the last-holding device 35 brought in position to hold the toe of the last 268 against the toe of the vamp and the heel of the last against the quarter. With the last in this position, the treadle 55 is depressed and the edges of the vamp clamped and the eccentric mechanism 34 actuated by the handle 87 so as to bring the last tightly forward against the toe of the vamp to form the vamp, whereby the vamp receives its shape, and the edges become formed into outwardly projecting flanges. The bar 103 with its plate 104 is in the meantime adjusted. The operating handle 90 is then actuated so as to remove the dog from its recess and thereby bring the belt on to the driving pulley. This causes the bar 103 to be moved longitudinally along the last whereupon its plate 104 glides over the projecting edges of the quarter and counter and turns them over so

as to make them outwardly projecting. The operation having been completed, the vamp and quarter with outwardly projecting edges may be removed from the machine, and a new one replaced and the operation repeated.

My machine is automatic in its operation and by means of it a very large amount of vamps and quarters may be produced.

The particular advantage of the special shape of the vamps and quarters with outwardly projecting flanges is that it enables shoes to be made without the objectionable filling, which is usually composed of scrapings of rubber, wood, poor leather, etc., and which when placed between the sole and the insole causes heating of the foot; also the use of a welt is dispensed with. These improvements enable a shoe to be made which has far better wearing qualities than the ordinary shoe, and also is more comfortable and hygienic. Also by means of my improved machine the cost of shoes may be greatly reduced.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a vamp and quarter-forming machine, vamp-holding means, comprising a plate having a cut out portion substantially the desired shape of the vamp, and a second plate cooperating with the first and capable of being used for right and left vamps.

2. In a vamp and quarter-forming machine, vamp-holding means, comprising a stationary plate having a cut-out portion substantially the desired shape of the vamp, a movable plate having a cutout portion substantially the desired shape of the vamp, means registering said plates, and means for raising and lowering the movable plate, said plate being capable of being used for right and left vamps.

3. In a vamp and quarter-forming machine, the combination of a vamp holding plate, a reversible clamping plate vertically movable above said vamp-holding plate, means adapted to register with said clamping-plate and guide the same for movement toward or away from said vamp-holding plate, and means for forcibly moving said clamping-plate against said vamp-holding plate.

4. In a vamp and quarter-forming machine, the combination of a U-shaped vamp-holding plate, symmetrically disposed vertical guide-rods secured to the top face of said plate, a reversible U-shaped clamping plate vertically movable on said guide-rods and normally yieldably held spaced from said holding plate whereby the front edge of a vamp may be inserted between said plates, means for forcibly moving downwardly the clamping plate to hold said edge between said plates, means for forcing a

last longitudinally forwardly against said vamp to form the same, and adjustable means for holding the last against upward displacement while it is being forced.

5. In a vamp and quarter-forming machine, a quarter supporting plate having longitudinal and vertical adjusting means, a longitudinally moving bar having a plate, and means for moving said bar and plate, so as to turn over the edges of the quarter projecting beyond the supporting plate and make them outwardly extending.

6. In a vamp and quarter-forming machine, a bar pivoted at one end and locked at the other, having a quarter edge-turning plate, and movable longitudinally of the machine for turning the edges of the quarter.

7. In a vamp and quarter forming machine, the combination of a table, a U-shaped vamp holding plate supported by and above one end of said table, vertical guide pins projecting upwardly from said vamp holding plate, a U-shaped perforated reversible additional plate resting on the vamp holding plate and having its perforations registering with and receiving said pins, a perforated clamping plate, cooperating with the reversible plate and vertically slidable upon said pins, means for forcing the clamping plate downwardly and means for forcing a shoe last forwardly against said U-shaped plates.

8. In a vamp and quarter forming machine, the combination of a table, a U-shaped vamp holding plate supported by and above one end of said table, vertical guide-pins projecting upwardly from said vamp holding plate, a U-shaped perforated reversible additional plate resting on the vamp holding plate and having its perforations registering and receiving said pins, a perforated clamping plate cooperating with the reversible plate and vertically slidable upon said pins, means yieldably holding the clamping plate in raised position, foot-operated means for forcing the clamping plate downwardly, a suitably mounted adjustable last holding means having a holding point adapted to be moved between the arms of the U-shaped parts, and means for forcing a last longitudinally forwardly between the arms of said U-shaped parts.

9. In a vamp and quarter forming machine, the combination of a table, a U-shaped vamp holding plate supported on said table, guide-pins projecting therefrom, a U-shaped reversible plate having perforations registering and receiving said pins, a clamping pin cooperating with the reversible plate and vertically slidable upon said pins, foot-operated pins for closing the clamping plate downwardly, a suitably mounted adjustable last holding means adapted to be moved between the arms of the U-shaped parts, a carriage longitudinally

adjustably slidable on said table, a quarter support slidable on said carriage, cam operated means for forcing said support forwardly, and a vertically movable adjusting plate beneath said quarter support.

10. In a vamp and quarter forming machine, the combination of a table, a vamp holding means on one end of said table, last holding means adapted to cooperate with said vamp-holding means to hold the forward part of the last in place, a carriage longitudinally adjustably slidable on said table, a quarter support slidable on said carriage, cam-operated means for forcing said support forwardly to cause said last to be clamped between said quarter support and said vamp holding means and said last holding means, a vertically movable adjusting plate beneath said support, rotary threaded spindles, longitudinally disposed on said table, internally threaded shoes slidable on said table and receiving the threads of said spindles, posts carried on said shoes, a bar pivoted to one of said posts and releasably locked to the other post, a quarter edge turning plate mounted on said bar and adapted to slide over said quarter support to turn the upper edges thereof upwardly, and means for automatically rotating said spindles successively in opposite directions whereby said plate and bar are longitudinally reciprocated.

11. In a vamp and quarter forming machine, the combination of a table, means on one end of said table for holding the forward end of a last, a quarter holding support on the other end of said table, means for forcing said quarter support forwardly for clamping a quarter upon the last and the last against the last holding means, rotary threaded spindles longitudinally disposed on said table, internally threaded shoes slidable on said table and receiving the threads of said spindles, posts carried on said shoes, a bar pivoted to one of said posts and releasably locked to the other, a quarter edge turning plate mounted on said bar and adapted to slide over said quarter support and means for automatically rotating said spindles successively in opposite directions whereby said plate and bar are longitudinally reciprocated.

12. In a vamp and quarter forming ma-

chine, the combination of a table, means on said table for holding the forward end of a last means for holding the rear-end of the last and a quarter thereon, a transverse bar adapted to be moved across the quarter supporting means, a quarter edge turning plate mounted on said bar, supports to which one end of said bar is pivoted and the other end thereof releasably locked, and means for automatically reciprocating said bar across said quarter supporting means.

13. In a vamp and quarter forming machine, the combination of a table, a U-shaped vamp holding plate supported by and above one end of said table, vertical guide pins projecting upwardly from said vamp holding plate, a U-shaped perforated reversible additional plate resting on the vamp holding plate and having its perforations registering with and receiving said pins, a perforated clamping plate cooperating with the reversible plate and vertically slidable upon said pins, means yieldably holding the clamping plate in raised position, foot operated means for forcing the clamping plate downwardly, a suitably mounted adjustable last holding means having a holding point adapted to be moved between the arms of the U-shaped parts, a carriage longitudinally adjustably slidable on said table, a quarter support slidable on said carriage, cam operated means for forcing said support forwardly, a vertically movable adjusting plate beneath said support, rotary threaded spindles longitudinally disposed on said table, internally threaded shoes sliding on said table and reversing the threads of said spindles, posts carried on said shoes, a bar pivoted to one of said posts and releasably locked to the other, a quarter edge turning plate mounted on said bar and adapted to slide over said quarter support, and means for automatically rotating said spindles successively in opposite directions whereby said plate and bar are longitudinally reciprocated.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

ALBERT STRAUB.

Witnesses:

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C. P. GOEPEL.