March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

Filed Oct. 18, 1934 7 Sheets-Sheet 1

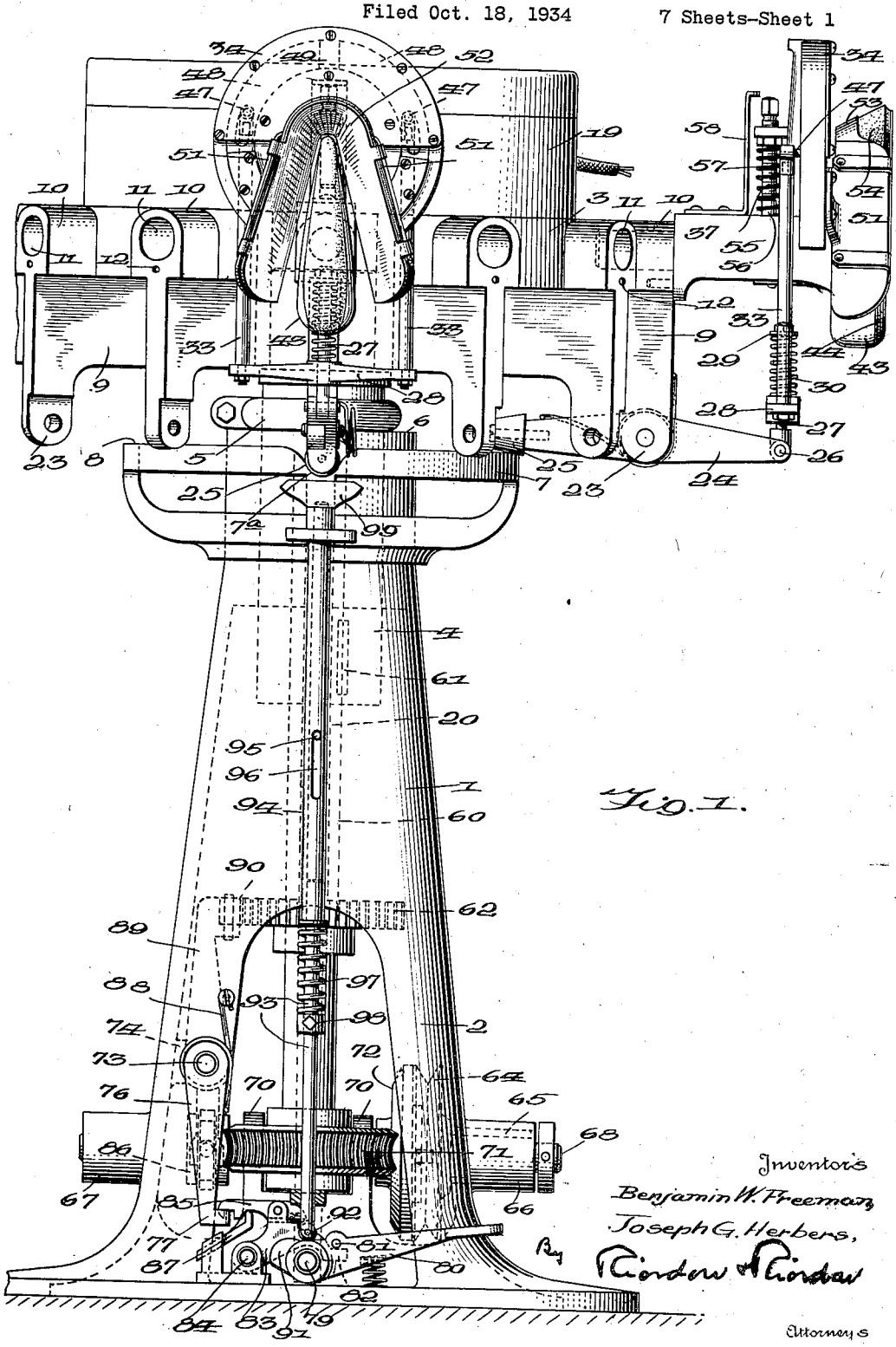


Fig. 1.

Inventors
Benjamin W. Freeman,
Joseph G. Herbers,
By Riordon & Riordon
Attorneys

March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

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Fig. 2.

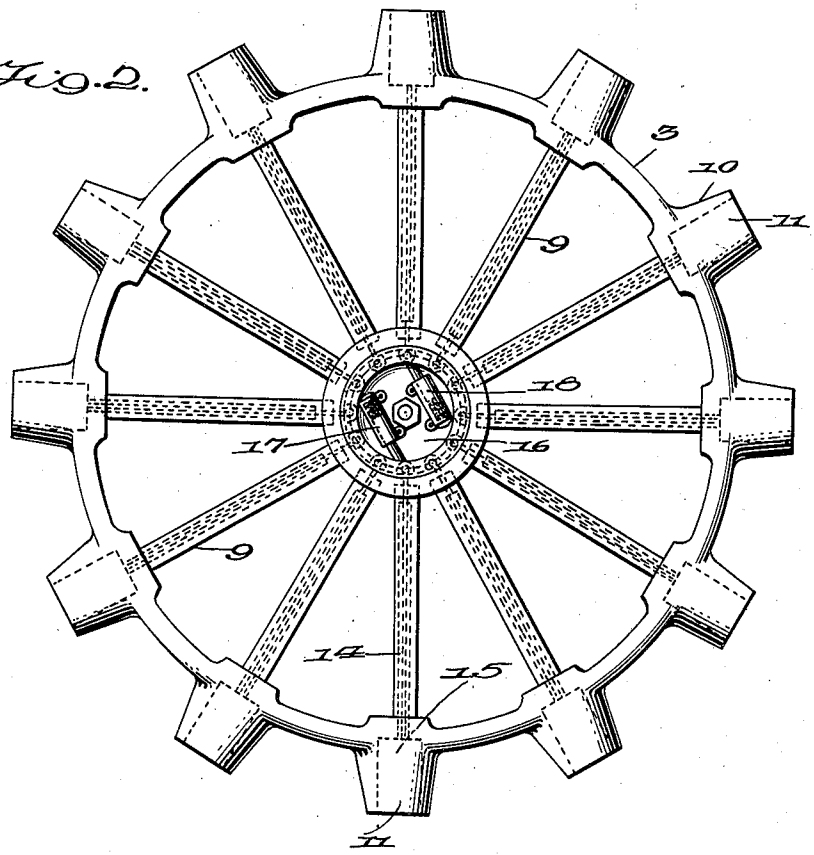


Fig. 3.

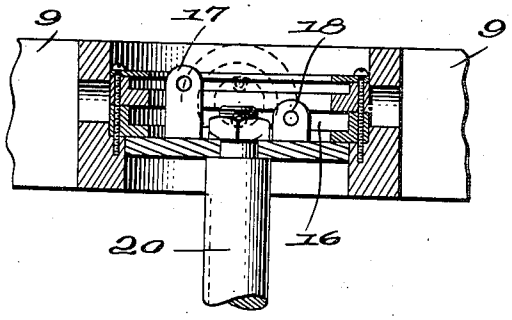
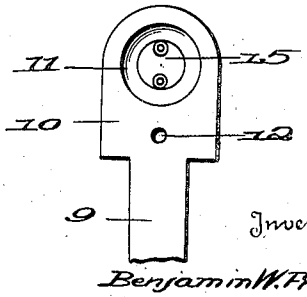


Fig. 4.



Inventors
Benjamin W. Freeman,
Joseph G. Herbers,
By Riordan & Riordan
Attorneys

March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

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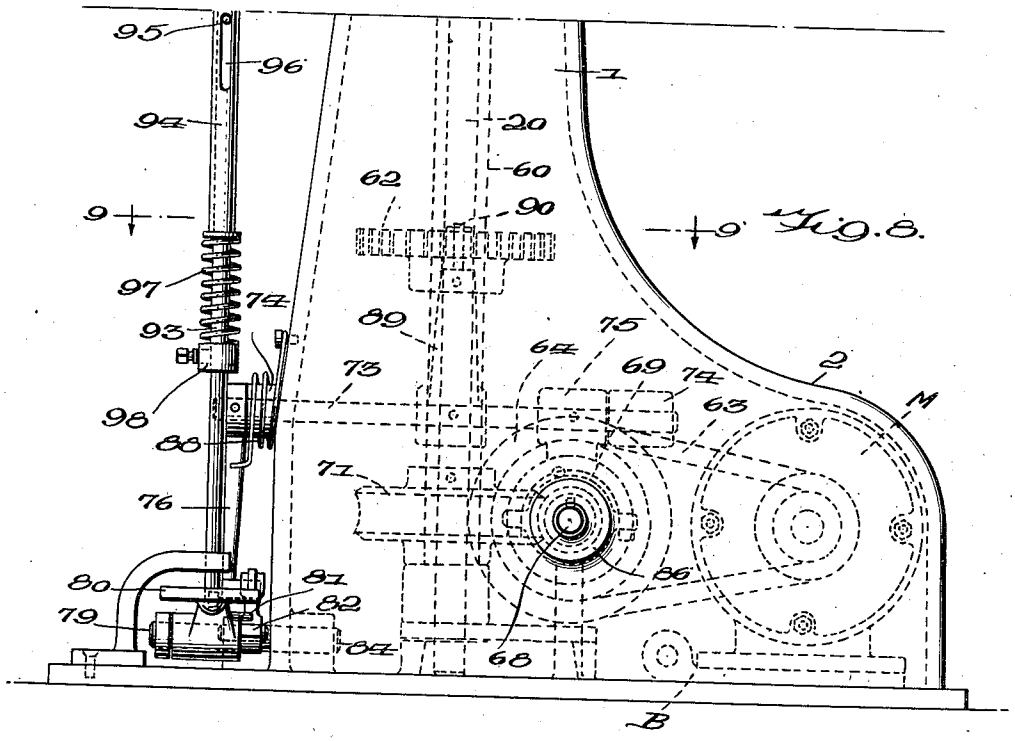


Fig. 8.

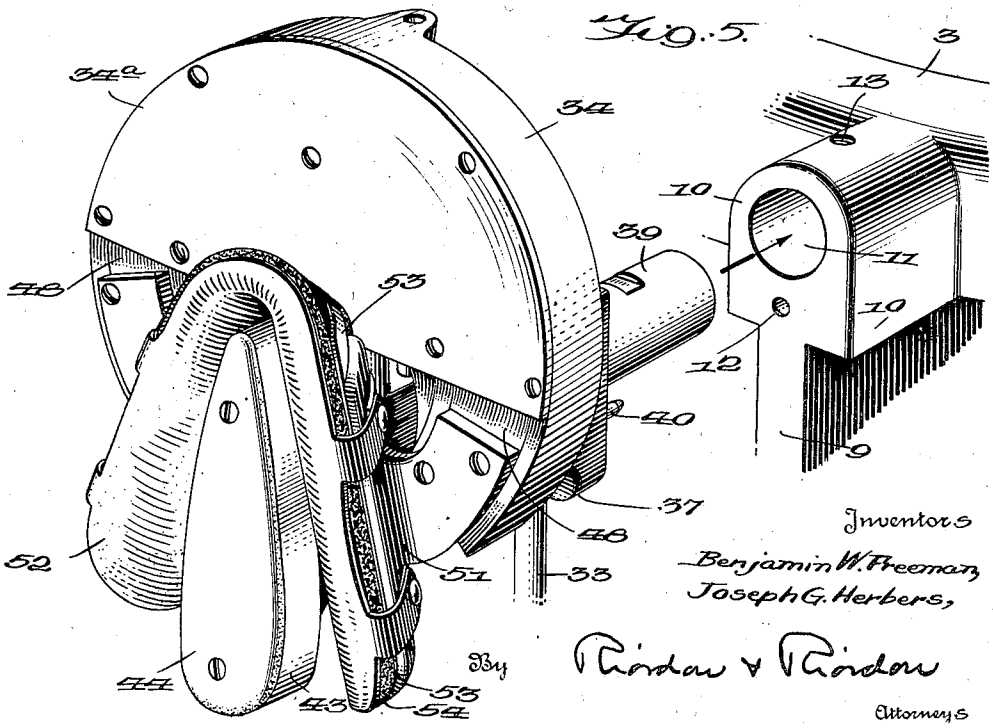


Fig. 5.

Inventors
Benjamin W. Freeman,
Joseph G. Herbers,
By Riordan & Riordan
Attorneys

March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

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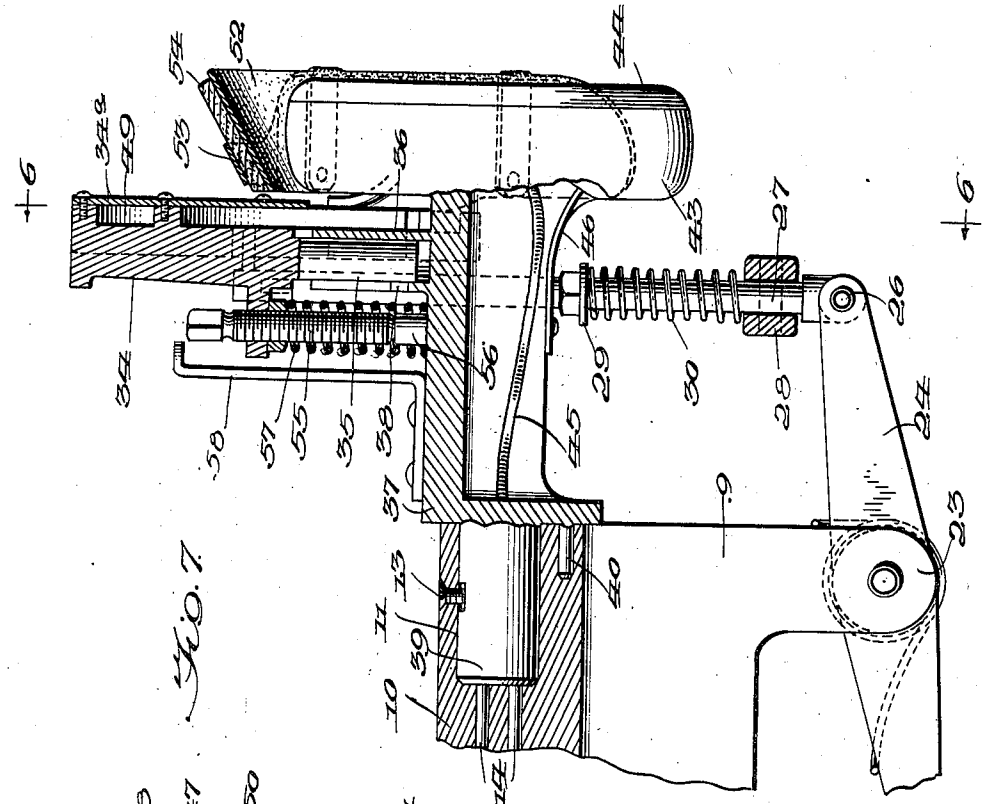


Fig. 7.

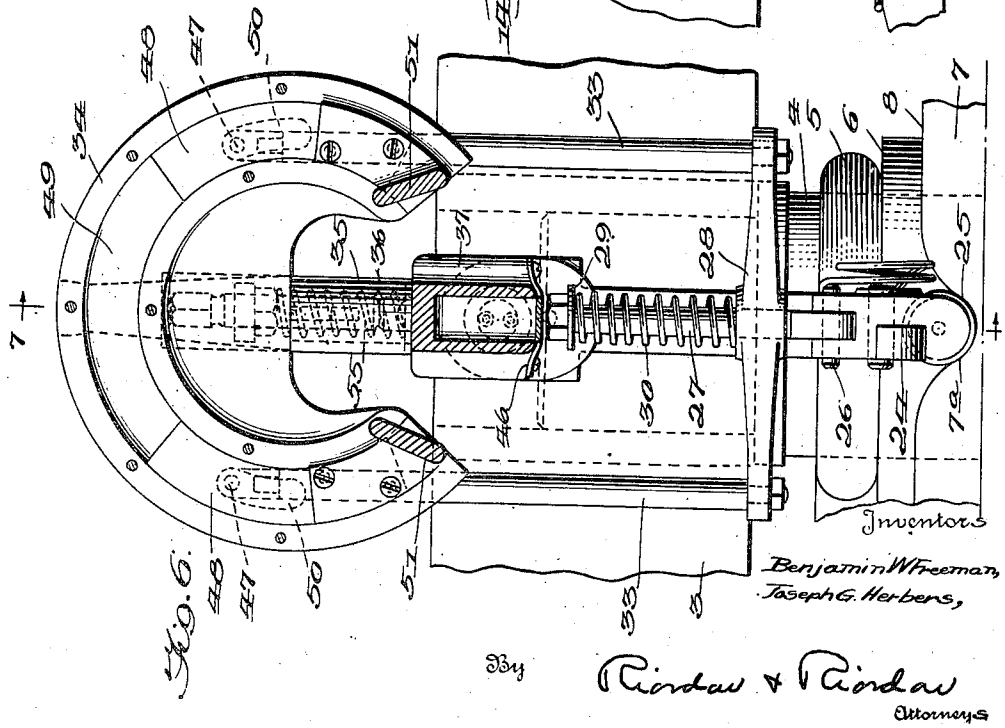


Fig. 6.

Inventors
Benjamin W. Freeman,
Joseph G. Herbens,
By Riordan & Riordan
Attorneys

March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

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Fig. 9.

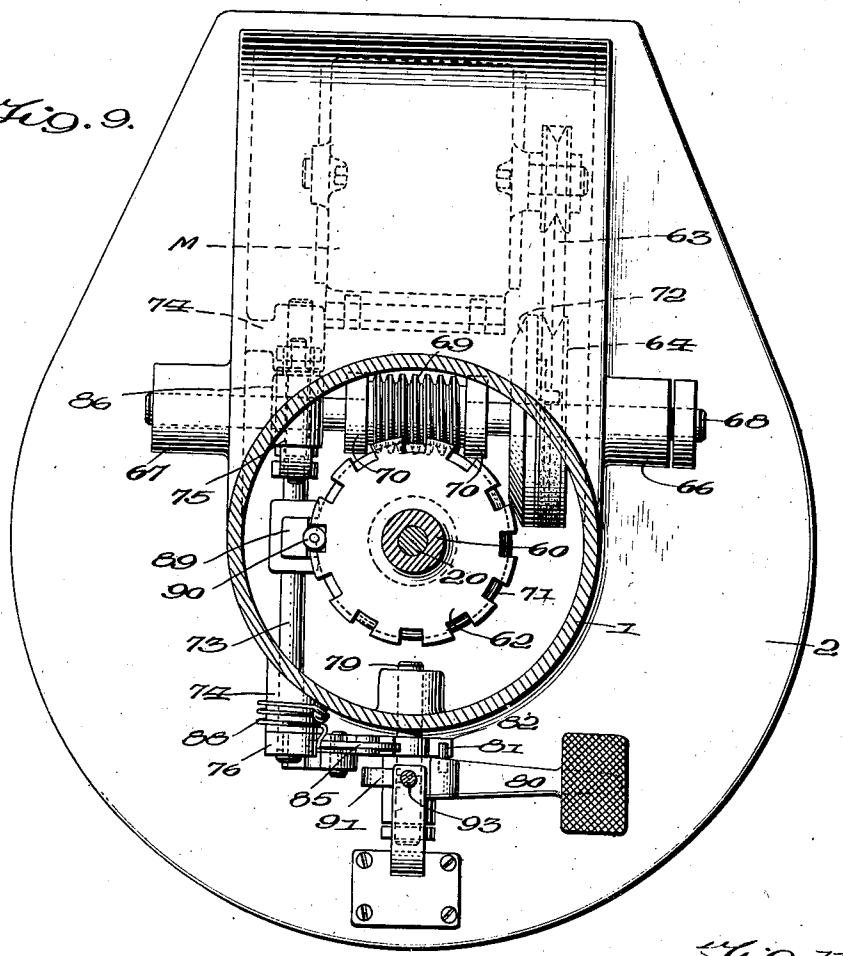


Fig. 10.

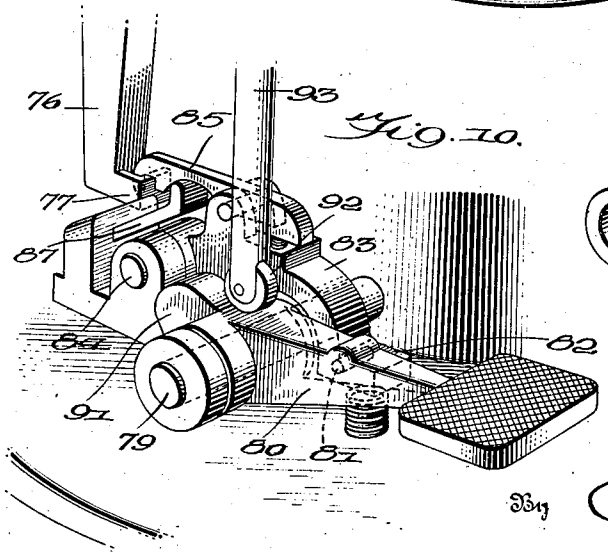
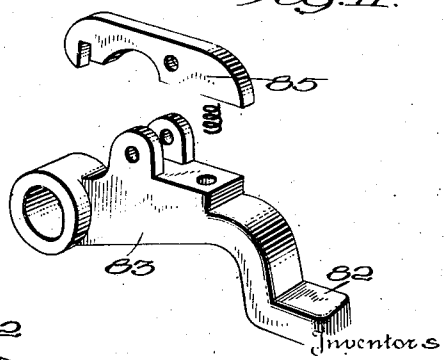


Fig. 11.



Inventors

Benjamin W. Freeman,

Joseph G. Herbers,

By Riordon & Riordon

Attorneys

March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

Filed Oct. 18, 1934 7 Sheets-Sheet 6

Fig. 12.

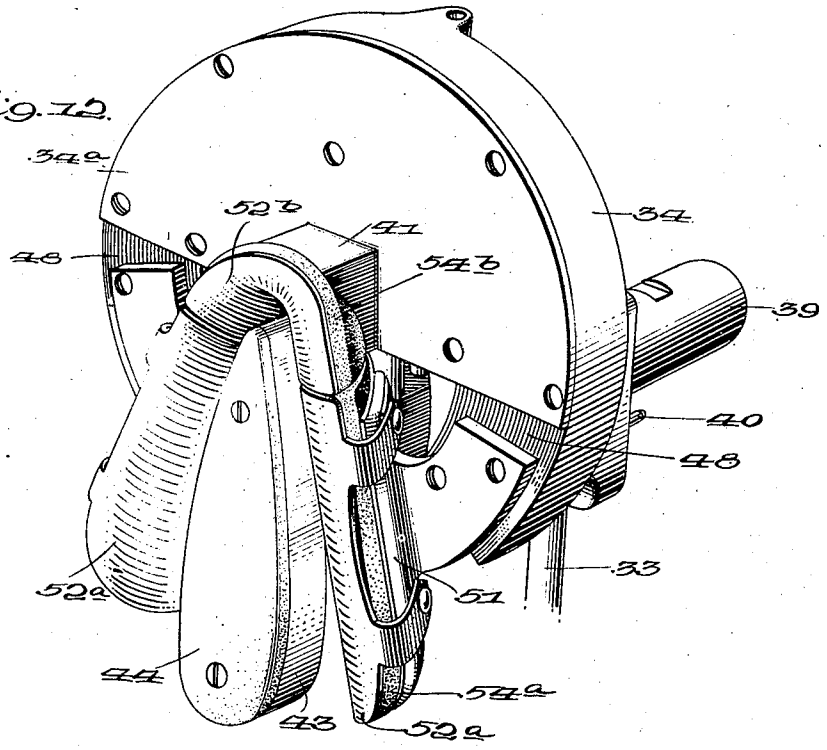
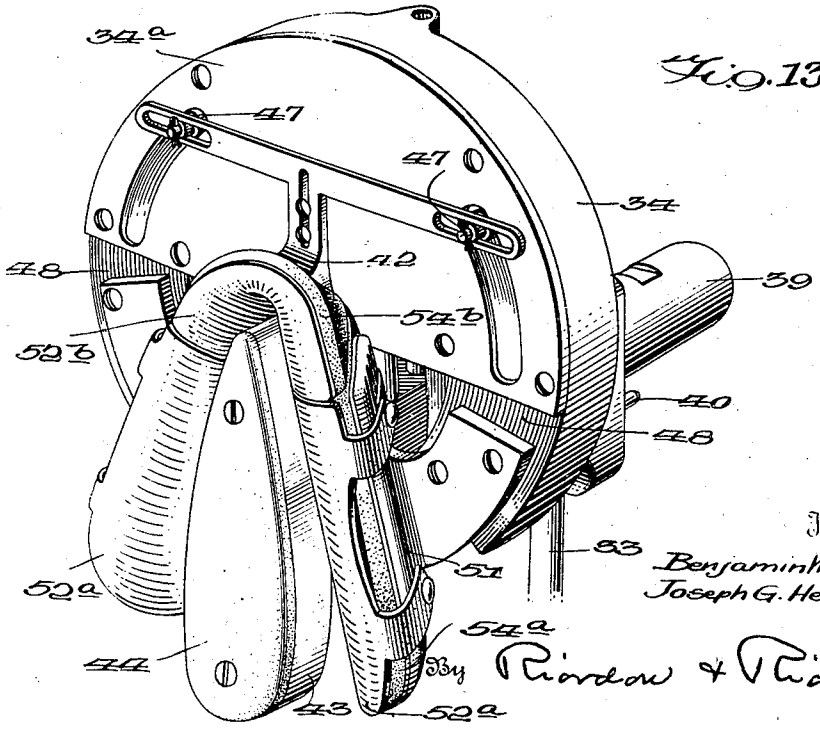


Fig. 13.



Inventor
Benjamin W. Freeman,
Joseph G. Herberg,
By Riordon & Riordon
Attorneys

March 18, 1941. B. W. FREEMAN ET AL 2,235,363

SHOE UPPER SHAPING MACHINE

Filed Oct. 18, 1934 7 Sheets-Sheet 7

Fig. 7.

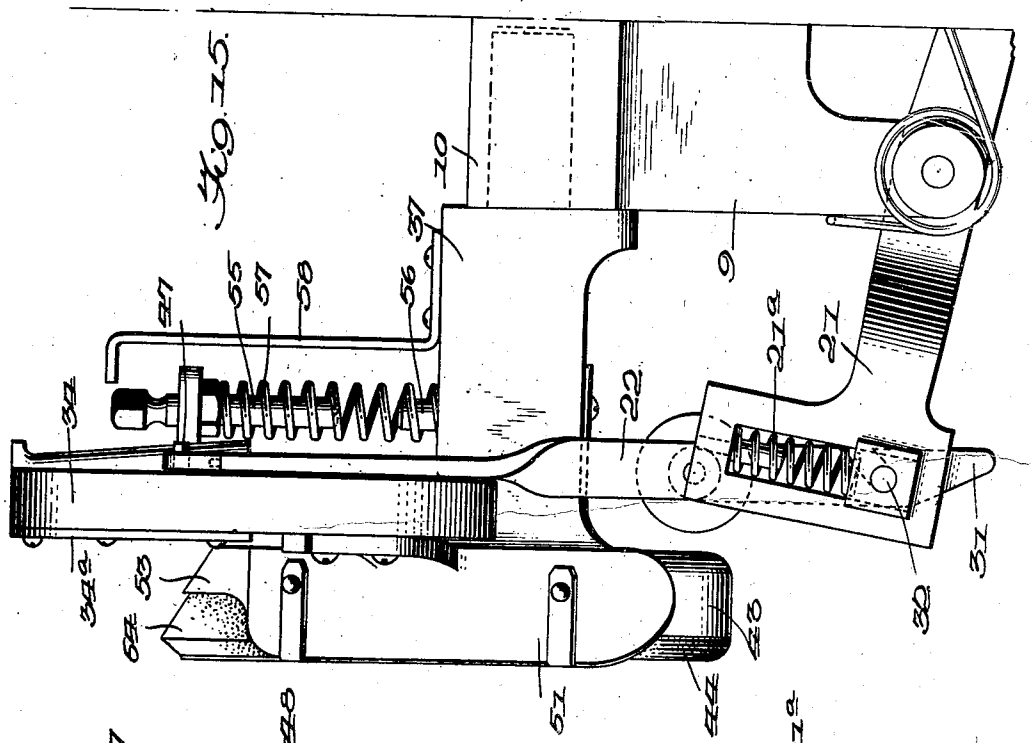
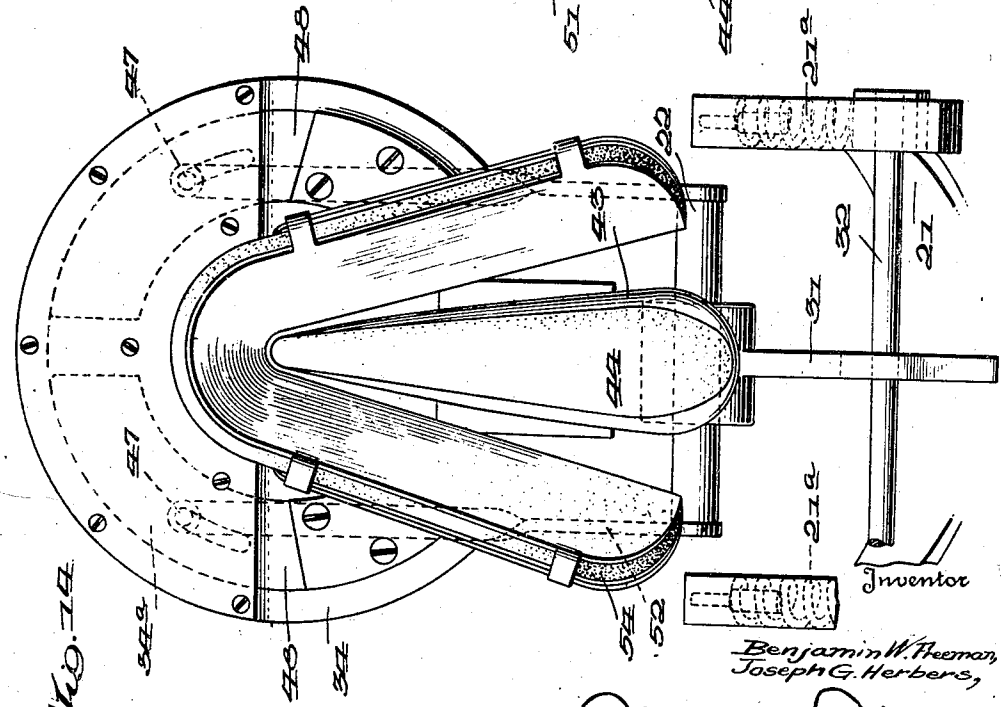


Fig. 7a.



Inventor

Benjamin W. Freeman,
Joseph G. Herbers,

By Riordan & Riordan

Attorneys

Patented Mar. 18, 1941 2,235,363

UNITED STATES PATENT OFFICE

2,235,363

SHOE UPPER SHAPING MACHINE

Benjamin W. Freeman and Joseph G. Herbers, Cincinnati, Ohio, assignors to The Louis G. Freeman Company, Cincinnati, Ohio, a corporation of Ohio

Application October 18, 1934, Serial No. 748,957

50 Claims. (Cl. 12—51)

The present invention relates to shoe machinery and more particularly to shoe upper shapers designed to form and shape shoe uppers, and to smooth the backs and sides thereof.

No matter how carefully shoes are made, or the uppers of shoes are cut, fitted and lasted, manufacturing processes tend to produce a gaping of the quarters, wrinkling or roughness at the seams, and similar faults difficult to eradicate afterwards. This is particularly true when it is considered that the shoe must be removed from the last. Accordingly, one of the objects of this invention is to so shape the finished upper as to eliminate such faults, and to impart a finish to the quarters of the shoes, by smoothing out the back seams and lining, and "setting up" the quarters.

More particularly, the herein described invention effects improvements in the art by conforming and modifying shoe shapers of the type described in the United States patents to Ruff, et al., No. 1,334,968, of March 30, 1920, and to Freeman, et al., No. 1,720,891 of July 16, 1929.

In the improved mechanism, as heretofore, there is provided a plurality of forms and shaping members on a rotatable head or turret. Each of the shaping forms is provided with a heating unit, and the arrangement is such that the shoes or upper parts may remain within the shaping mechanism a more evenly regulated time than has been obtained with the use of a single form and shaping unit. The efficient and novel operation with accurately controlled temperature and pressure, eliminates the possibility of ruining the fine leather of shoe uppers by too great exposure to heat or pressure in the shaping operation.

The forms are so designed, and arranged on the turret in such a manner that when a shoe element is once placed on a form, it will be supported thereon in proper position for shaping without the assistance of an operator.

The series of complementary shaping forms are movable in unison, with the turret, such that the movement of one unit away from the operator, brings the next unit into operating position, and the operator placing shoes on the forms need not move out of position, thereby saving time and labor over that required to feed a plurality of individual pressing units having no cooperating relation.

It is a further object in the improved structure to include an electric control mechanism within easy reach and to so dispose all the connecting parts that there will be little likelihood of damage being done to the electrical connections inadvertently.

The electrical mechanism is preferably provided with a stationary rheostat connected by push pin sockets to stationary brushes which are in contact with rings through which electric current may pass to individual heating units in the respective shaping forms. This construction makes a standard head or turret together with its electrical connections available for any desired number of shaping units without additional changes in structure.

A specific object of this invention is the provision of improved means for shaping shoe uppers on forms, cooperative with elements which apply localized pressures to the mounted shoe uppers with a constant force, applied during a complete cycle of rotation of the turret head of the machine.

While machines of the type illustrated in the said patents embody structural features capable of carrying out some of the herein recited objects, they are nevertheless essentially hand operated devices, whereas the instant structure is primarily a power actuated shaper, although capable of ready adaptation for hand operation should same be found desirable.

Among the objects of the present invention is the provision of mechanism acting as a very effective lock against displacement of movable parts, shoe elements positioned on the machine, etc., during the cycle of revolution.

Inasmuch as the structure herein described may be used for pressing, shaping, and forming complete shoes, assembled or unassembled portions of shoes, the term "shoe element" is employed to include all classes.

An important object of the invention is the application and regulation of sufficient pressure along the sides and backs of shoe uppers particularly, to effect a permanent shape, together with the application and maintenance of such pressure by power actuated means.

An improved clamping or pressing mechanism is provided in conjunction with the form upon which the shoe is placed, consisting of clamping members which may be interconnected and movable to apply pressure in a plurality of directions, e. g., longitudinally of the shoe element, and transversely thereof from different sides, this mechanism, however, utilizing the same broad principle of operation as illustrated in Patent No. 1,720,891.

Inasmuch as the thickness of leathers, seams, etc., may vary, a unique cushioning mechanism

is provided to equalize pressures applied to the opposite sides of the shoe element, such that the pressures against one side will automatically equalize with those applied to the other side of the shoe without, in any manner, disturbing the pressures applied against the back or heel portion of the shoe element.

While a preferred form illustrates clamping members interconnected in such a manner that pressure may be applied along the back seams of the shoe element as well as about the sides and quarters, it is within the scope of this invention to utilize clamping and pressing members which are not interconnected and in which the pressure on the back seam may be applied independently from that applied to the sides, or may be eliminated entirely if found desirable. Such an arrangement is illustrated herein.

Mounting of an entire shaping mechanism and form, as a single unit which may be readily detached from the rotatable turret, is also contemplated, together with the use of selected and interchangeable units, whereby one machine may be adapted to accommodate different widths and sizes for a run of shoes such as women's, or for interchanging units to fit the machine for other runs of shoes such as growing girls', misses', boys', men's, etc.

Conditions may arise where it will be unnecessary to utilize all of the units on the machine for a given operation, and it is an object of the invention to provide means whereby mounted units may be rendered inoperative during the use of other units.

A still further object includes control means effective to permit the application of power to the turret, whereby to rotate the turret a distance equal to the space between any pair of presser units, and then automatically cut out the power, thus insuring adequate placement of each unit to the operator.

It is further contemplated that various adjusting means will be provided, whereby individual portions of the unit, as well as the unit itself, may be variably positioned to accommodate any operator. The assembled turret and associated parts are mounted for vertical adjustments to accommodate the height of an operator without any changes in either the electrical equipment or the shaping mechanism.

To the attainment of the above and other objects which will appear as the description proceeds, reference may be made to the accompanying sheets of drawings, in which:

Fig. 1 is a front elevation of the main assembly with certain of the pressing heads or units removed;

Fig. 2 is a plan of the turret which carries the several pressing units;

Fig. 3 is an enlarged detail in section of the central portion of the turret showing electrical connections;

Fig. 4 is an enlarged detail of a mounting socket on the turret for one of the pressing head units;

Fig. 5 is an enlarged perspective of a pressing head unit illustrating a manner of mounting same in the turret;

Fig. 6 is a vertical section of one of the pressing head units taken on the line 6—6 of Fig. 7;

Fig. 7 is a different vertical section of the pressing head unit taken on the line 7—7 of Fig. 6;

Fig. 8 is a side elevation of the base portion of the machine illustrating the power and control mechanism;

Fig. 9 is a plan partly in section of the base portion taken on the line 9—9 of Fig. 8;

Fig. 10 is a perspective view, slightly enlarged, of a portion of the control mechanism;

Fig. 11 is a detail perspective view of elements in the control mechanism;

Fig. 12 is an enlarged perspective of a modified pressing head unit;

Fig. 13 is a similar view of still a different modification;

Fig. 14 is a face view of a pressing head unit, illustrating a modified form of connection to the actuating mechanism; and

Fig. 15 is a side elevation thereof.

Although the general principle of operation is quite similar to the disclosures of Freeman Patent No. 1,720,891, mentioned above, improvements have been made by way of variation in the structure of the individual presser units and in the application of power to operate the turret and the individual heads mounted thereon.

It is to be understood, however, that units of the type illustarted in the machine of said patent, or equivalents thereof, may be utilized if desired, in the machine of the instant invention with but very slight adaptation, other than the substitution of one unit for the herein described pressing heads.

Referring more specifically to the drawings in which like reference numerals designate like parts, there is generally indicated at 1, a column formed with an enlarged base portion 2 which not only provides an adequate support for the entire machine, but serves to house most of the actuating and control mechanism.

The column being hollow, serves to house connections from the actuating mechanism to the driven parts which are supported at the top of the column.

A turret 3 has secured thereto or formed integrally therewith, a sleeve 4 about which is adjustably clamped a split collar 5. The sleeve 4 which forms a stem or support for the turret 3, has an external diameter equal to the internal diameter of the upper portion of the column 1. The top of the column provides a bearing 6 for the collar 5, whereby, through the medium of the collar the turret is rotatably supported on the column, while at the same time, it may be vertically adjusted thereon.

A cam member 7 having a single low point or notch 7a, and a continuous upper cam surface 8, is adjustably, but fixedly, mounted exteriorly of the column 1 below the turret and hence, may be positioned to engage elements carried by the turret, in any position of adjustment of the turret. In other words, as the turret is vertically adjustable, so also is the cam members 6.

As shown particularly in Figs. 1 and 2 the turret is in the form of a wheel having a series of spoke-like webs 9, the outer ends of which are interconnected for the sake of strength and rigidity. The outer end of each web is formed with a boss 10 having an enlarged opening 11 to receive a supporting shank of an individual pressing unit, and a smaller opening 12 therebelow to receive a steadying pin on such unit, whereby the unit may be rigidly supported on the turret. An opening extending through the boss at an angle to the opening 11 may serve for reception of a set screw 13 designed to clamp the head in position.

Leads 14 extend from a pin socket 15 at the inner end of each opening 11 through the webs 9 to a commutator and connections indicated generally at 16. This commutator and the various

electrical connections are generally the same as disclosed in Patent No. 1,720,891, and need no particular description here. Suffice to say, that the commutator is relatively fixed and makes electrical contact with brushes at the ends of the leads 14 whereby current may pass to the individual heads, while interiorly mounted are pin and socket connections 17—18 for detachably connecting a rheostat organization, which may be positioned flatwise over the upper central part of the turret. This rheostat organization and controls will be housed in a dust excluding casing 19.

The commutator is carried on a shaft 20 which extends to the base of the column in non-rotatable relation to the column, but which may be adjusted vertically to accommodate adjustments of the turret. Below the boss 10 on each of the webs 9 is a projecting lug 23 to which is pivoted a rocker arm 24 terminating at its inner end in a tapered roller 25 which is positioned to ride upon the cam surface 8 of cam member 7.

The outer end of the rocker arm 24 is pivoted at 26 to a connecting rod 27. A cross head 28 is mounted for free movement on the connecting rod 27 which extends through a central hole in the cross head of slightly greater diameter than the diameter of the rod 27. Between a washer or an enlarged head 29 on the end of the rod 27 and the cross head 28 is a spring 30, whereupon it will be obvious that a downward pull by the outer end of the rocker arm 24 will first tend to compress the spring 30 against the cross head, and thereafter move the cross head downwardly, the rod 27 and the spring 30 forming a cushion joint between the cross head 28 and the rocker arm 24.

The ends of the cross head are connected to upwardly extending links 33 which run to the head 34 of the pressing and shaping unit proper.

The head 34 is mounted on a stem 35 which extends slidably into a boss 36 extending from a bracket arm 37. A pin and slot connection 38 (Fig. 7) serves to prevent rotation of the stem 35 in the boss 36. The bracket arm terminates at one end in a hollow shank 39, interiorly of which is positioned an electric plug (not shown), adapted to engage the socket 15 in the boss 10, when the shank is positioned in the opening 11, and secured in position by means of the set screw 13 thus supporting the pressing unit in the turret. The exterior of the shank 39 may be suitably recessed or notched for reception of the set screw 13.

A steadying pin 40 will enter the opening 12 to prevent relative movement between the turret and the head.

The outer end of the bracket 37 terminates in a form 43 having an insulated outer face 44, the form being designed to enter and support a shoe element which is to be pressed and shaped, the sides of the form of course, being shaped to the predetermined contour which the shoe element will take. Leads 45 extend from the plug in the hollow shank 39 to a heating element (not shown) internally of the form and are prevented from displacement away from the bracket 37 by an insulating plate 46. This arrangement of form, heating means and electrical connections is substantially the same as in Patent No. 1,720,891, to which reference may be made for further detailed description thereof.

From the description thus far of the pressing unit it will be evident that the form 43, upon which a shoe element will be supported for the shaping operation, is rigid with the turret and suitably heated by connections extending from the commutator to the interior of the form and that the head 34 of the unit, while carried by the bracket 37 is movable or slidable with respect thereto and with respect to the form 43.

The links 33 which extend upwardly from the cross head 27 are connected at their upper ends to pivot pins 47 mounted respectively in curved sliding member 48 which move in an arcuate track 49, cut or formed in the head 34. Suitable slots 50 are provided in the head 34 for the pins 47, and a cover plate 34a is utilized to hold the slides 48 in place, as well as to exclude dirt therefrom.

Secured to each of the sliding members 48 is a shaping or pressing wing 51, these wings being interconnected across the upper end of the form by a flexible strap or contact liner 52 backed by a spring steel band 53 extending down across the interior faces of the wings 51. The wings and band are shaped to conform substantially to the shape of the outer faces of the form 43.

A pad 54 of yieldable material, such as rubber, is positioned intermediate the strap 52 and the band 53. Preferably, this pad will extend from the lowermost tip of one wing up over the form and down to the lowermost tip of the other wing, over the operating surfaces of both wings 51. The flexible strap or contact liner 52, which is detachably held on the wings by snap fasteners, or any equivalent means, act to secure the pad 54 in place.

When the wings are actuated to apply pressure against the shoe element or the form, there will be, in addition to the main application of pressure by the wings 51, localized pressures by the pad, inwardly against selected portions of the shoe. By varying the shape of the pad, and the shape of the form, any desired localized pressures may be obtained on the shoe, e. g., on the extreme edges only of the shoe element, with or without lesser pressures against other portions of the shoe, or it may be advantageous to apply a localized pressure over a substantial selected area of the side of the shoe, in addition to areas adjacent the upper edges.

Further, it may be desired to press one portion of the shoe element by direct engagement with the wings, and another portion by interposition of the pad. The pad need not be extended from one wing to the other over the form, but separate pads may be used for each wing.

Various modifications in the head unit will occur to those skilled in the art, and as illustrative of variations from the preferred form above described, reference is made to Figs. 12 and 13.

The unit of Fig. 12 may omit the interconnecting portion between the wings 51. The head 34 may be provided with a forwardly extending boss or projection 41 which functions as a positive presser operating in a downward direction, and which may be provided with a contact liner 52b and a pad 54b. The wings 51 will be provided with pads 54a and contact liners 52a. The operation of this form will be substantially the same as that of the preferred form shown in Fig. 5 in that downward movement of the head 34 will first produce a contact and application of pressure across the back of the shoe at the top of the form, by the member 41, and the wings 51 will thereafter come into engagement with the sides of the shoe element.

If desired the continuous contact liner 52 and a continuous pad 54 might be utilized in this modification, in exactly the same manner as in the preferred form.

In Fig. 13 an arrangement is illustrated in which the head **34** might readily be stationary and an upper movable presser member **42** provided thereon. This member **42** is suitably connected to an extension of the pins **47** by any convenient anti-friction and lost motion connections and guided for vertical movement. If the head is held in a fixed position, such that the only movements of the pressing means will be obtained through the element **42** and the wings **51**, then the pressures may be applied simultaneously to the several parts of the shoe instead of a pressure first on the counter portion of the shoe followed by subsequent pressures on the sides.

Hence, it will be seen that each of the units is provided with a main pressing means, i. e., the wings **51**, and a pressing means (pad or pads **54**) for localizing pressures, which may or may not form a part of the main pressing means. Such an auxiliary means may be adapted to almost any predetermined contour, made possible by variation in the thickness and shape of the pad and changes in location thereof, whereby pressure may be brought to bear on selected portions of shoe elements, additional to direct pressures applied by the contoured surfaces of the wings and form.

In order to limit downward movement of the head **34** with respect to the bracket there is provided an adjusting screw **55** carried by the head **34** and engageable with a stop **56** on the bracket **37**, this screw being effective to variably limit the degree of movement permitted the head **34**.

A spring **57** surrounding the screw **55** and stop **56** serves normally to maintain the head **34** in its upward or outer position on the bracket **37**.

A stop **58** may be secured to the bracket **37** to limit upward movement of the head, although this upward movement is limited generally by the rocker arm **24** and associated parts.

When tension is applied to the cushion arrangement **27—30** to draw the cross head **28** downwardly, the links **33** and members **47** will first draw the head **34** downward until that portion of the strap **52** which interconnects the wings **51** engages a shoe element on the form thus resisting further downward movement, the screw **55** and stop **56** being adjusted to regulate the degree of pressure desired at this point. Thereafter the members **47** will partake of a sliding movement in the arcuate track **49** to move the shaping wings **51** inwardly toward each other and into engagement with the sides of a shoe element on the form.

Obviously, then, a downward pressure will be attained at the back edge of the shoe band; in fact, over as much of the heel portion of the shoe as desired, dependent upon the shape and size of the interconnecting portion of the liner **52**, the pad **54** and the spring steel band **53**.

By increasing the thickness of the pad **54** and locating its operating portions nearer to the top of the wings, all of the downward pressure of the assembly can be exerted on the curved sides of the shoes, to the exclusion of positive pressure against the back seam of the shoe.

Should one side of the shoe be somewhat thicker than the other side, due either to variable thicknesses in the leather or the seams, the cross head will rock slightly on the connecting rod **27** due to the fact that the hole through the cross head is slightly larger than the diameter of the rod **27** and thus the pressures applied to one side of the shoe will be equalized to those applied to the other side of the shoe. In other words, the wings will seek their own positions due to the relative movement permitted by rocking of the cross head.

Referring now particularly to Figs. 1, 8, 9, 10 and 11, wherein is disclosed the power actuated mechanism for rotating the turret and for insuring proper compression of the shaping or pressing means about the form, there is illustrated an elongated sleeve **60**, which rotatably fits about the shaft **20** and within which the shaft **20** may slide vertically. The sleeve **60**, while rotatable, is not vertically movable but is, however, splined at **61** to the turret sleeve **4**, thus permitting vertical adjustment of the turret and sleeve **4** with respect to the sleeve **60**, without in any manner affecting unitary rotatable movement of the two sleeves **4** and **60**.

Pinned to the sleeve **60** is a notched cam **62** which forms the direct driving connection between the turret and the driving mechanism in the base portion **2** of the column **1**, the notched cam **62** providing a direct control for limiting the degree of movement of the turret.

A motor M may be located in the base portion **2** of the column, or any source of power such as a drive from conventional factory power, may be utilized for operating the machine. Where a motor is utilized, an adjustable bracket B may support same for belt tightening purposes. The motor may be connected by a belt **63** to a pulley **64**, which is formed with an integral, elongated hub **65** mounted in a fixed boss **66** of the base portion **2**. A similar boss **67** is located diametrically opposite the boss **66**, and a shaft **68** is mounted for limited sliding movement in the two bosses. The end of the shaft **68** which passes through the boss **66** extends freely through the elongated pulley hub **65**. Splined to the shaft is a worm **69**, for rotation thereby, the shaft being free to slide longitudinally of the worm. The worm is held against endwise movement by a pair of lugs **70** which are cast in the base of the column.

Pinned to the sleeve but, of course, independent of the shaft **20** is a worm wheel **71**, positioned to mesh with the worm **69**.

A clutch plate **72**, which may be of the friction type but which is preferably of a semi-positive type, is rigidly keyed to the shaft **68**, such that endwise movement of the shaft causes an engagement or disengagement of the plate with the side face of the pulley **64**. When the pulley and clutch are engaged, the shaft **68** will be caused to rotate by the pulley **64**, which is constantly rotating, thereby rotating the worm and worm wheel to rotate the sleeve **60**, the sleeve **4** and the turret **3**.

Extending through the base portion **2** transversely of the shaft **68** is another shaft **73**, supported by a pair of lugs **74** formed in the base portion **2**. A yoke **75** is rigidly secured to this shaft, adjacent one end thereof, and an arm **76**, terminating in a flanged toe portion **77** is securely fixed thereto adjacent its other end.

A stub shaft **79**, carried in a suitable bearing on the base portion **2**, supports a spring pressed treadle **80**, in which is mounted a kick-off pin **81**, positioned to engage a lug **82**, which forms a part of a control lever **83**. The control lever **83** is pivotally mounted on a shaft **84**, carried by an adjustable supporting bracket secured to the base **2**.

The control lever **83** carries a spring pressed, pivoted latch **85** terminating at one end in a hook

portion which is located to engage the angle shaped toe 77 of the arm 76.

Depression of the treadle 80, and consequent engagement of the pin 81 with the lug 82, will move the latch downwardly and to the right (see Fig. 10), pulling the arm 76 to the right, and thereby rocking the shaft 73, which in turn rocks the yoke 75. The ends of the yoke engage a clutch shifting collar 86 secured to the shaft 68, and movement of the yoke accordingly slides the shaft 68 to bring the clutch plate 72 into engagement with the pulley 64.

As the arm 76 moves to the right under the influence of the latch 85, the curved underside of the latch rides over a cam finger 87 which has the effect of lifting the hook end of the latch away from the toe 77 until, at the moment of engagement between the clutch plate and the pulley, the arm 76 is released, to return to its original position under the influence of a spring 88. The cam finger 87 is, of course, adustable to accommodate various conditions.

In order to insure that the clutch plate maintains a connection between the source of power and the driving mechanism long enough for the turret to move a distance equal to the space between two pressing units, there is provided a second arm 89 pinned to the shaft 73, said arm terminating in a toe portion carrying a cam roll 90, both arms 76 and 89 being therefore rigidly secured to the same shaft. The cam 62 is shaped with a series of notches about its periphery, one notch for each pressing unit carried by the turret head. When the turret is stationary, the roller 90 will be positioned within a notch, but when the shaft 73 is rocked under the influence of the treadle 80, the roll 90 will be withdrawn from its notch to ride on a high or peripheral surface portion of the cam, as the cam rotates with the sleeve 60.

Obviously, the clutch plate cannot become disengaged from the pulley, even though the latch 85 has released the arm 76, due to the cam finger 87, until such time as the cam roll 90 has reached an adjacent notch, whereby it will drop into such notch under the influence of the spring 88 which, pulling the arm 76 in one direction, tends to push the arm 89 in the opposite direction.

The end of the treadle 80 beyond its pivot shaft 79 is projected to form a cam 91, adapted to engage a cam roll 92 carried by the lower end of a push rod 93 which telescopes into a sleeve 94. Relative movement between the rod and sleeve is limited by a pin 95 operating in a slot 96. A spring 97 surrounding the rod 93 engages the lower end of the sleeve 94 and abuts a collar 98 on the rod. It follows then that depression of the treadle 80 will compress the spring 97, thereby forcing the sleeve 94 upwardly, maintaining the sleeve in such position until compression of the spring is relieved. Release of the treadle acts to release the compression of the spring which is then free to push the rod 93 downwardly, and through the medium of the pin 95 to positively return the sleeve 94 to a lower position as the pin reaches the bottom of the slot 96.

The cam 7 has its sole low point or notch 7*a* positioned at the front of the machine, that is at a point facing the operator, and it is into this notch that the roller 25 on the rocker 24 will ride when the turret comes to rest with a pressing unit ready to receive a shoe element.

The upper end of the sleeve 94 carries a head 99 (Fig. 1) positioned to engage the arm 24 or the roller 25 when the treadle 80 is depressed, whereupon depression of the treadle and upward movement of the rod 93 will raise the end of the rocker 24 to lift the roller 25 out of the notch in synchronism with movements of the driving mechanism, which is being released for operation by the depression of the treadle. The turret will begin to rotate, carrying the roll 25 on to the higher surface 8 of the cam, thus drawing down the pressing wings and straps about the form and holding same in such position until the turret has made a complete revolution bringing the roll back to the notch again. Preferably, the head 99 will engage an inner end of the roller 25 to facilitate the rotary movement of the rocker with respect to the head 99 and the cam.

The general operation is as follows. When a pressing unit is in front of the operator, and the treadle in its normal position, a roller will be resting in the notch 7*a*, thus positioning the head 34 in spaced relation to the form, whereby a shoe element may be placed on the form.

Depression of the treadle then produces, first, a downward movement of the wings 51 and the interconnecting strap or liner 52 about the heel or counter portion of a shoe element which, of course, is positioned with the toe pointing downward and the sole facing the operator in the embodiment of the invention shown. Further movement of the treadle will cause an inward movement of the wings toward each other, downward movement being limited by engagement of the liner 52 with the shoe element, and by the stop 56. At the same time, the rotary movement of the turret is beginning, and the roller 25 which has been raised by the push rod 93 moves on to the high portion of the cam to hold the shaping means tightly about the form which, in the meantime, through the medium of contact with the commutator as the turret rotates, is heated. As soon as the turret has rotated a distance sufficient to bring another unit to the operator with its roll dropping into the notch 7*a*, rotary movement of the turret stops, due to release of the arm 89 from the notched cam 62. The cam 7—8, however, is maintaining the first form in clamping and pressing relation to the shoe.

The operations are then repeated until every unit has been filled, whereupon the first unit will have reached the operator and the shoe element thereon will be ready for removal.

Although a turret capable of carrying twelve forms is illustrated in the preferred embodiment, it will be obvious that any desired number of units may be provided, to suit conditions in an individual shoe factory.

As described, the cam 7, and the operating connections are arranged to continuously compress the shaping wings about the constantly heated forms, with the exception of the one unit which is positioned in front of the operator.

This is perfectly satisfactory so long as shoe elements are in place on the forms, but conditions may arise where it will be unnecessary to utilize all of the units on the machine, and this will result in clamping wings of an unused unit directly against a heated form, without the relief afforded by placement of shoe elements thereon, a condition which tends towards injury of the contact liner and rubber pad, by the constant heat.

To avoid such a condition, means may be provided to render a selected unit, or units, inoperative, as illustrated in Figs. 14 and 15.

In the embodiment of these figures, the rocker 24 is replaced by a yoke 21, and the rod 27, cross head 28, spring 30 and links 33 are omitted in favor of a frame 22, connected to the pivot pins 47. Extending from the frame is a finger 31 which is suitably notched to detachably engage a cross bar 32, carried by the outer ends of the yoke 21.

The cross bar 32 is mounted in the yoke for yielding movement, being held in position by springs 21*a*, for the purpose of facilitating engagement or disengagement between the finger 31 and the bar 32.

This arrangement, with the yieldable cross bar 32 and a substantially centrally located finger 31 will permit the wings to secure their own positions, or equalize pressures just as in the arrangement utilizing a cross head 28 and rod 27.

Should it be desired to operate the machine by hand power instead of by the automatic application of mechanical or electrical power, the mechanism within the column and in the base portion thereof may be dispensed with, and individual unit actuating mechanism, such as disclosed in the aforesaid Patent No. 1,720,891, may be substituted therefor. All that is necessary in this connection would be to secure each of such actuating mechanisms to the lower portion of the wings 9, and to connect same to the rod 27 at the point 26. Inasmuch as this hand actuating mechanism carries a locking mechanism with each unit thereof, it is unnecessary to utilize the rocker arm 24 and the cam mechanism 7—8. The bracket 53, by its engagement with the lug which supports the adjusting screw 55 will still function to limit upward movement of the head 34.

As stated above, the entire unit, including the forming and pressing means, of said patent might be substituted if hand operation is found desirable.

The operation by hand is otherwise the same as in the power machine except, of course, that the turret will be moved step by step manually and the pressing wings and straps clamped against a shoe manually by the actuating mechanism, not shown, but fully described and disclosed in the said patent, and to which reference may be found desirable.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States, is:

1. In a shoe upper shaper, a form adapted to fit within and support a shoe, said form being shaped to conform to, and to facilitate an operation upon a shoe upper, shaping means for engaging and applying pressure against said form including means for localizing pressures on selected portions of said form, power actuated means for moving said shaping means into and out of engagement with said form, and means automatically operative to maintain the application of such pressures a predetermined length of time.

2. In a shoe upper shaper, a heated form, shaped to facilitate an operation upon a shoe upper, pressing means for engaging said form including means for localizing pressures on selected portions of said form, power actuated means for moving said pressing means relative to said form, including means for automatically regulating the position of said pressing means with respect to said form.

3. In a shoe upper shaper, a heated form, shaped to facilitate an operation upon a shoe upper, pressing means for engaging said form provided with an auxiliary means for localizing pressures on selected portions of said form, power actuated means for moving said pressing and auxiliary means relative to said form, including means for automatically regulating the position of said pressing means with respect to said form.

4. In a shoe upper shaper, a heated form, shaped to facilitate an operation upon a shoe upper, pressing means for engaging said form including means for localizing pressure on selected portions of said form, power actuated means for moving said pressing means relative to said form, including means for automatically regulating the position of said pressing means with respect to said form, and means for maintaining said regulated position.

5. In a shoe upper shaping machine, the combination of a form adapted to fit within and support a shoe element, said form being shaped to facilitate an operation upon a shoe upper, and pressure applying means comprising the combination of members for applying pressures to the back and sides of a shoe element on said form, and means operable simultaneously with and in conjunction with said members for applying increased pressures to selected portions of the sides of said shoe element, and power actuated means for operating all of said pressure applying means.

6. In a shoe upper shaper, a form for supporting a shoe element in other than flat position, said form being shaped to facilitate an operation upon a shoe upper, shaping means for applying pressures to a shoe element supported on said form, said shaping means comprising main pressing means movable with relation to said form in a certain direction, and auxiliary pressing means operatively connected with said main pressing means, said auxiliary pressing means being also movable with relation to said form but movable in a different direction than said main pressing means, said auxiliary pressing means being carried by said main pressing means, and power actuated means for operating all of said pressure applying means.

7. In a shoe upper shaper, means having contoured surface portions for supporting a shoe element, and pressure applying means including elements for localizing pressures against selectively predetermined portions of said first mentioned means, said first and second mentioned means being movable one with relation to the other, and power actuated means for operating said pressure applying means.

8. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against said form, and power means for moving said shaping means into pressing engagement with said form and for thereafter compressing selected portions of said outer shaping means over the form.

9. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against said form, comprising a movable head, a pair of pivoted wings carried thereby and a contact strap interconnecting said wings, and power means for moving said head toward said form, thereby to position said strap in pressing engagement with said form, and for thereafter compressing said wings against se-

lected portions of said form additional to the portions engaged by said strap.

10. A shoe upper shaper comprising in combination a support, a plurality of shaping forms mounted thereon, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, power means for moving said shaping means into pressing engagement with the respective forms and for thereafter compressing selected portions of said outer shaping means over the form, and a single control means for said power means effective to render said power means inoperative upon completion of movement of the shaping means to operative position.

11. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, means interconnecting said members about one end of said form, and means to actuate said head towards said form whereby to press said interconnecting means against the form and thereafter to compress said members against the form.

12. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, means interconnecting said members about one end of said form, means to actuate said head toward said form whereby to press said interconnecting means against the form and thereafter to compress said members against the form, and means to equalize the pressures applied by one member to the pressures applied by the other member.

13. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, means interconnecting said members about one end of said form, power actuated means to move said head toward said form whereby to press said interconnecting means against said form and thereafter to compress said members against the form, and means to equalize the pressures applied by one member to the pressures applied by the other member, comprising a rod connected to said power actuated means, and a cross head mounted for rocking movement on said rod and connected to said shaping head.

14. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, means interconnecting said members about one end of said form, means to actuate said head toward said form whereby to press said interconnecting means against the form and thereafter to compress said members against the form, and means to apply localized pressures against selected portions of the form.

15. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, means interconnecting said members about one end of said form, means to actuate said head toward said form whereby to press said interconnecting means against the form and thereafter to compress said members against the form, and cushion means connecting said actuating means to said head and pressing members, effective to absorb shock as the pressing members and head are actuated, to determine the amount of pressure applied, and to equalize the pressures respectively applied by said members.

16. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, and power actuated means to move said head toward said form, and to press said members against the sides of said form when said head reaches a predetermined position relative to said form.

17. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, outer pressing means mounted on said head for movement into engagement with said form, power actuated means to move said head toward said form, and means to press said outer pressing means against said form when said head reaches a predetermined position relative to said form.

18. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, power actuated means to move said head toward said form and to press said members against the form, when said head reaches a predetermined position relative to said form, and means to apply localized pressures against selected portions of the form.

19. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, power actuated means to move said head toward said form and to press said members against the form, when said head reaches a predetermined position relative to said form, and means to equalize the pressures applied to one side of the form with respect to those applied to another side thereof.

20. A shoe upper shaper comprising in combination a support, a shaping form mounted

thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, power actuated means to move said head toward said form and to press said members against the form, when said head reaches a predetermined position relative to said form, means to apply localized pressures against selected portions of the form, and means to equalize all of the pressures applied to one portion of the form with respect to those applied to an opposite portion thereof.

21. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, power actuated means to move said head toward said form and to press said members against the form, when said head reaches a predetermined position relative to said form, and means supported by said members for applying localized pressures against selected portions of said form simultaneously with the application of pressures by said members.

22. A shoe upper shaper comprising in combination a support, a shaping form mounted thereon, said form being contoured to facilitate an operation upon a shoe upper, a shaping head mounted for movement relative to said form, a pair of cooperating outer pressing members mounted on said head for movement respectively against sides of said form, power actuated means to move said head toward said form and to press said members against the form, when said head reaches a predetermined position relative to said form, means supported by said members for applying localized pressures against selected portions of said form, simultaneously with the application of pressures by said members, and means interconnecting said members, effective to equalize all of the pressures applied to one portion of the form with respect to those applied to an opposite portion of a form.

23. A shoe upper shaper comprising in combination a support, a member movable thereon, a plurality of shaping forms mounted on said member and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, means for moving said member and for simultaneously compressing selected portions of said outer shaping means over said forms.

24. A shoe upper shaper comprising in combination a support, a turret movable thereon, a plurality of shaping forms mounted on said turret and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, power means for rotating said turret and for simultaneously compressing selected portions of said outer shaping means over said forms.

25. A shoe upper shaper comprising in combination a support, a member movable thereon, a plurality of shaping forms mounted on said member and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means for each form, positioned to bear against the respective forms, means for moving said member, and means operatively interposed between said support and said member effective to compress said outer shaping means over the respective forms in synchronism with movements of said member on said support.

26. A shoe upper shaper comprising in combination a support, a rotary turret thereon, a plurality of shaping forms carried by said turret and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, power means for rotating said turret, and means carried by said support for compressing said outer shaping means over the respective forms in synchronism with rotary movements of said turret.

27. A shoe upper shaper comprising in combination a support, a member movable thereon, a plurality of shaping forms mounted on said member and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, means for moving said member, and means operatively interposed between said member and said support effective to compress said outer shaping means over the respective forms in synchronism with movements of said member on said support.

28. A shoe upper shaper comprising in combination a support, a member movable thereon, a plurality of shaping forms mounted on said member and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, means for moving said member, and means effective to compress said outer shaping means over said forms in synchronism with movements of said member comprising a cam carried by said support, and operating connections between said shaping means and said cam.

29. A shoe upper shaper comprising in combination a support, a member movable thereon, a plurality of shaping forms mounted on said member and movable therewith, each of said forms being contoured to facilitate an operation upon a shoe upper, outer shaping means positioned to bear against the respective forms, means for moving said member, and means effective to compress said outer shaping means over said forms in synchronism with movements of said member, comprising a cam fixedly mounted with respect to said member, and operating connections between said shaping means and said cam, and control means for said member moving means, effective automatically to limit movement of said member a distance equal to the space between two of said forms.

30. A shoe upper shaper comprising in combination a machine support, a plurality of shaping forms mounted on said support, each of said forms being contoured to facilitate an operation upon a shoe upper, a shaping head for each form, movable relative to its form, and outer pressing members mounted on each head to move against the respective forms, means carried by and interconnecting said members, mounted in position to bear against the forms, means to actuate said heads to press said interconnecting means against said forms, means to compress said outer pressing members against said forms, and common means to maintain all of said pressing means tightly in engagement with said forms.

31. A shoe upper shaper comprising in combination a machine support, a plurality of shaping forms mounted on said support, each of said forms being contoured to facilitate an operation upon a shoe upper, a shaping head for each form, movable relative to its form, and outer pressing members mounted on each head to move against the respective forms, means carried by and interconnecting said members, mounted in position to bear against the forms, means to actuate said heads to press said interconnecting means against said forms, means common to all of said forms, effective to compress said outer pressing members against said forms, means to apply localized pressures against selected portions of said forms, and means to equalize the pressures applied to one portion of a form with those pressures applied against an opposite portion of said form.

32. A shoe upper shaper comprising in combination a support, a plurality of movable shaping forms mounted thereon, outer shaping means positioned to bear against the respective forms, each of said forms being contoured to facilitate an operation upon a shoe upper, power means for moving said shaping means into pressing engagement with the respective forms and for thereafter compressing selected portions of said outer shaping means over the form, and a single control means for said power means effective to render said power means inoperative after movement of one form out of operative position and another form into operative position.

33. A shoe upper shaper comprising in combination a support, a turret movable thereon, a plurality of shaping forms mounted on said turret and movable therewith, outer shaping means positioned to bear against the respective forms, power means for rotating said turret and for simultaneously compressing selected portions of said outer shaping means over said forms, and means for vertically adjusting said turret and associated parts on said support.

34. In a shoe upper shaper, a shaping unit comprising a heated form shaped to facilitate an operation upon a shoe upper and pressing means for engaging said form, power actuated means for moving said pressing means relative to said form, connections between said power actuated means and said pressing means, and quickly detachable means to break said connections and render the pressing means of said unit inoperative at will.

35. In a shoe upper shaper, the combination of a support, a turret movable thereon, and a plurality of shaping units mounted on said turret and movable therewith, said units each comprising a form, shaped to facilitate an operation upon a shoe upper, heating means therefor and outer shaping means positioned to bear against the form, power means for rotating said turret and for simultaneously compressing the outer shaping means over the respective forms, including connections between said power means and said shaping means, and quickly detachable means to break the connections between said power means and the shaping means of a selected unit, thereby rendering the shaping means for said unit inoperative at will.

36. In a shoe upper shaper, a form adapted to fit within and support the side portions of a shoe upper adjacent to the shoe opening, and to facilitate an operation thereupon, means for heating said form, pressing means adapted to engage the outside of the shoe on the side portions adjacent to the rim of the opening substantially from the heel to the throat of said opening, and power actuated means connected to said pressing means and effective to actuate said pressing means toward said form.

37. In a shoe upper shaper, a form adapted to fit within and support the side portions of a shoe upper adjacent to the shoe opening, and to facilitate an operation thereupon, means for heating said form, pressing means adapted to engage the outside of the shoe on the side portions adjacent to the rim of the opening along a substantial length of said side portions simultaneously, and power actuated means connected to said pressing means and effective to actuate said pressing means toward said form.

38. In a shoe upper shaping machine, a form adapted to fit within and support the side portions of a shoe upper adjacent to the shoe opening, and to facilitate an operation thereupon, pressing means adapted to engage the outside of the shoe on the side portions adjacent to the rim of the opening, and means to move said pressing means toward and from a pressing engagement with said form, including a power receiving and translating means in said machine, and power actuated connections between said translating means and said pressing means.

39. In a shoe upper shaping machine, a form shaped with side faces converging to the back of the form, and adapted to enter the opening of a shoe and support the surfaces of the side portions of a shoe upper adjacent to the shoe opening, and to facilitate an operation thereupon, pressing means adapted to engage the outside of the shoe with said portions thereof adjacent to the rim of the opening, and means to move said pressing means toward and from a pressing engagement with said form, including a power receiving and translating means in said machine, and power actuated connections between said translating means and said pressing means.

40. In a shoe upper shaping machine, a form adapted to extend within and support a shoe, said form being elongated and having sides converging inwardly from end to end whereby the shoe may be placed thereover adjacent to the opening of the shoe, means for heating said form, pressing means adapted to engage the outside of the shoe on the side portions thereof adjacent to the rim of the opening over a major portion of the rim, and means to move said pressing means toward and from a pressing engagement with said form, including a power receiving and translating means in said machine, and power actuated connections between said translating means and said pressing means.

41. In a shoe upper shaping machine, the combination with an inner shaping form for receiving and supporting a shoe upper, and an outer shaping form positioned to press the side of said upper adjacent the upper edge thereof against the shaped contour of the inner shaping form, of means for positioning said upper and side portions thereof in substantial conformity with the shaped contour of the inner form prior to the application of pressure by the outer form, and means to move said outer shaping form toward and from a pressing engagement with said inner shaping form including a power receiving and translating means in said machine and power actuated connections between said translating means and said outer shaping form.

42. In a shoe upper shaping machine, the combination with a stand, an inner shaping form

secured thereto and adapted to fit within and support a low-cut shoe, means mounted on said stand for movement toward and away from the opposite sides of said inner shaping form, and outer shaping means secured to said movably mounted means and movable therewith, said inner shaping form and outer shaping means having coacting, substantially complementary surfaces adapted to engage and press between them the side surfaces of a shoe upper adjacent the top edge of the shoe opening, power actuated means, including a power receiving and translating means in said machine, connected to said movably mounted means for moving said means on the stand to bring the surfaces of the outer shaping means into engagement with the shoe mounted upon the inner shaping means, and press said side surfaces of the shoe against the surfaces of the inner shaping form.

43. In a shoe upper shaper, a plurality of forms, each adapted to fit within and support the side portions of a shoe upper adjacent to the shoe opening, and to facilitate an operation thereupon, pressing means for each of said forms adapted to engage the outside of the shoe on the side portions adjacent to the rim of the opening, power actuated means connected to said pressing means and effective to actuate said pressing means toward said form, means to initiate the application of power to a predetermined one of said pressing means and a respective form, at will, and means to maintain the application of power to the selected one of said pressing means during subsequent application of power to a second one of said pressing means.

44. In a shoe upper shaper, a plurality of forms each adapted to fit within and support the side portions of a shoe upper adjacent to the shoe opening, and to facilitate an operation thereupon, pressing means for each of said forms adapted to engage the outside of the shoe on the side portions adjacent to the rim of the opening, power actuated means connected to said pressing means and effective to actuate said pressing means toward said form, a single operator controlled means effective to initiate application of power to a selected pressing means, and means to maintain the application of power to the selected one of said pressing means during subsequent application of power to a second one of said pressing means.

45. The method of shaping shoes, which comprises supporting a plurality of shoe uppers on a plurality of resistance members in the path of power driven movable pressing means, selectively applying power to a predetermined one of said pressing means to drive the same, whereby to press top rim portions of the selected shoe upper against the resistance member upon which it is mounted, simultaneously from opposite sides, and applying power to a different one of said pressing means while maintaining the application of power to said first pressing means.

46. In a shoe upper shaper adapted to perform a finishing operation along a marginal portion of the ankle opening of a completed shoe, a form on which the shoe is placed, and means to apply yielding pressure to the shoe, including means effective to press the shoe upper against the form, at both sides of the ankle opening, said machine comprising a device operative to apply yielding pressure, mechanically to the work as aforesaid, by forcing the presser members toward each other from opposite sides of a shoe, and a second device also operative to cause such yielding pressure mechanically to be so applied by said members.

47. In a shoe upper shaper adapted to perform a finishing operation along a marginal portion of the ankle opening of a completed shoe, a form on which the shoe is placed, and means to apply yielding pressure to the shoe, including means effective to press the shoe upper against the form, at both sides of the ankle opening, said machine comprising a device operative to apply yielding pressure mechanically to the work as aforesaid, by forcing the presser members toward each other from opposite sides of a shoe, and a second device also operative to cause such yielding pressure mechanically to be so applied by said members, said first named device being constructed and arranged for operation by an operator to effect the application of preliminary pressure on the work, and said second named device being constructed and arranged to apply supplementary pressure in response to the operation of power means.

48. In a shoe upper shaper adapted to perform a finishing operation along a marginal portion of the ankle opening of a completed shoe, a form on which the shoe is placed, and means to apply yielding pressure to the shoe, including means effective to press the shoe upper against the form, at both sides of the ankle opening, said machine comprising a device operative to apply yielding pressure mechanically to the work as aforesaid, by forcing the presser members toward each other from opposite sides of a shoe, and a second device also operative to cause such yielding pressure mechanically to be so applied by said members, said first named device being constructed and arranged for operation by an operator to effect the application of preliminary pressure on the work, and said second named device being constructed and arranged to apply supplementary pressure in response to the operation of power means, and a single operator actuated control member for effecting operation of said first named device and rendering said power means effective to operate said second named device.

49. In a shoe upper shaper adapted to perform a finishing operation along a marginal portion of the ankle opening of a completed shoe, a form on which the shoe is placed, and means to apply yielding pressure to the shoe, including means effective to press the shoe upper against the form, at both sides of the ankle opening, said machine comprising a device operative to apply yielding pressure, mechanically to the work as aforesaid, by forcing the presser members toward each other from opposite sides of a shoe, and a second device also operative to cause such yielding pressure mechanically to be so applied by said members, said first named device being constructed and arranged for operation by an operator to effect the application of preliminary pressure on the work, and said second named device being constructed and arranged to apply supplementary pressure in response to the operation of power means, and means effective to restrain application of pressure to the work under power, until said first named device has been actuated by the operator to an extent sufficient to bring the form and the yielding pressure applying means close enough together and toward the work to prevent trapping of the operator's fingers therebetween.

50. In a shoe upper shaper adapted to perform

a finishing operation along a marginal portion of the ankle opening of a completed shoe, a form on which the shoe is placed, and means to apply yielding pressure to the shoe, including means effective to press the shoe upper against the form, at both sides of the ankle opening, said machine comprising a device operative to apply yielding pressure mechanically to the work as aforesaid, by forcing the presser members toward each other from opposite sides of a shoe, and a second device also operative to cause such yielding pressure mechanically to be so applied by said members, said first named device being constructed and arranged for operation by an operator to effect the application of preliminary pressure on the work, and said second named device being constructed and arranged to apply supplementary pressure in response to the operation of power means, a single operator actuated control member for effecting operation of said first named device and rendering said power means effective to operate said second named device, and means effective to restrain application of pressure to the work under power, until said first named device has been actuated by the operator to an extent sufficient to bring the form and the yielding pressure applying means close enough together and toward the work to prevent trapping of the operator's fingers therebetwen.

BENJAMIN W. FREEMAN.
JOSEPH G. HERBERS.