Dec. 8, 1931. A. W. ALTVATER 1,834,919

MACHINE FOR ORNAMENTING SHOE PARTS

Filed March 27, 1930 4 Sheets-Sheet 1

Fig. 1.

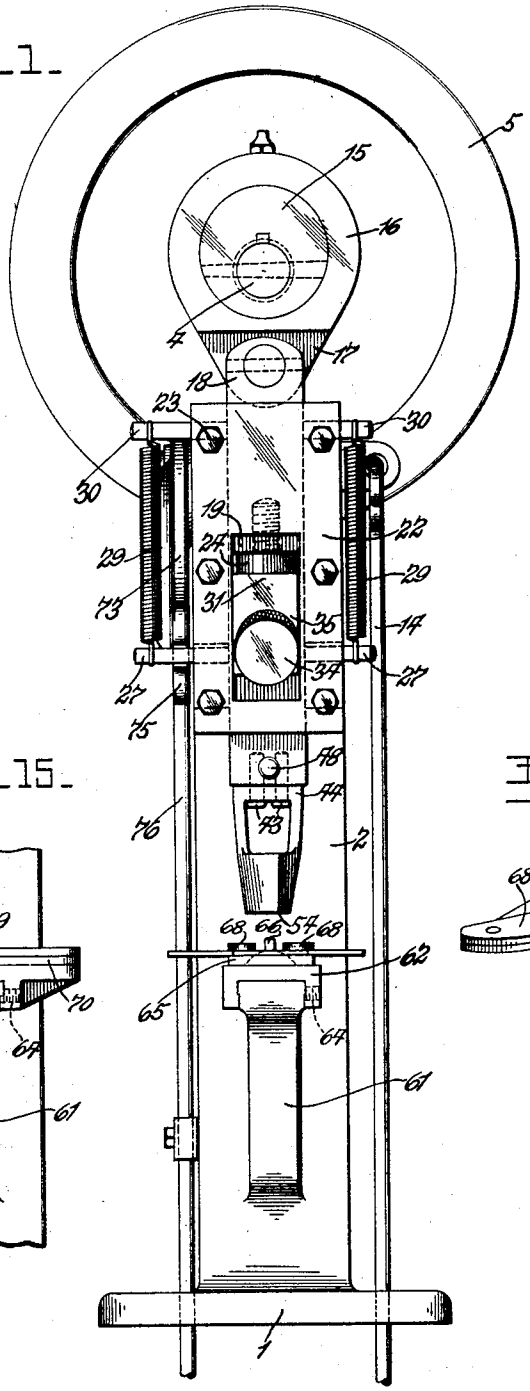


Fig. 15.

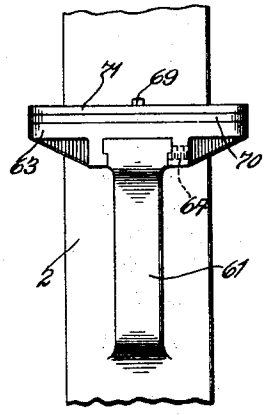
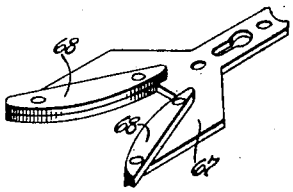


Fig. 16.



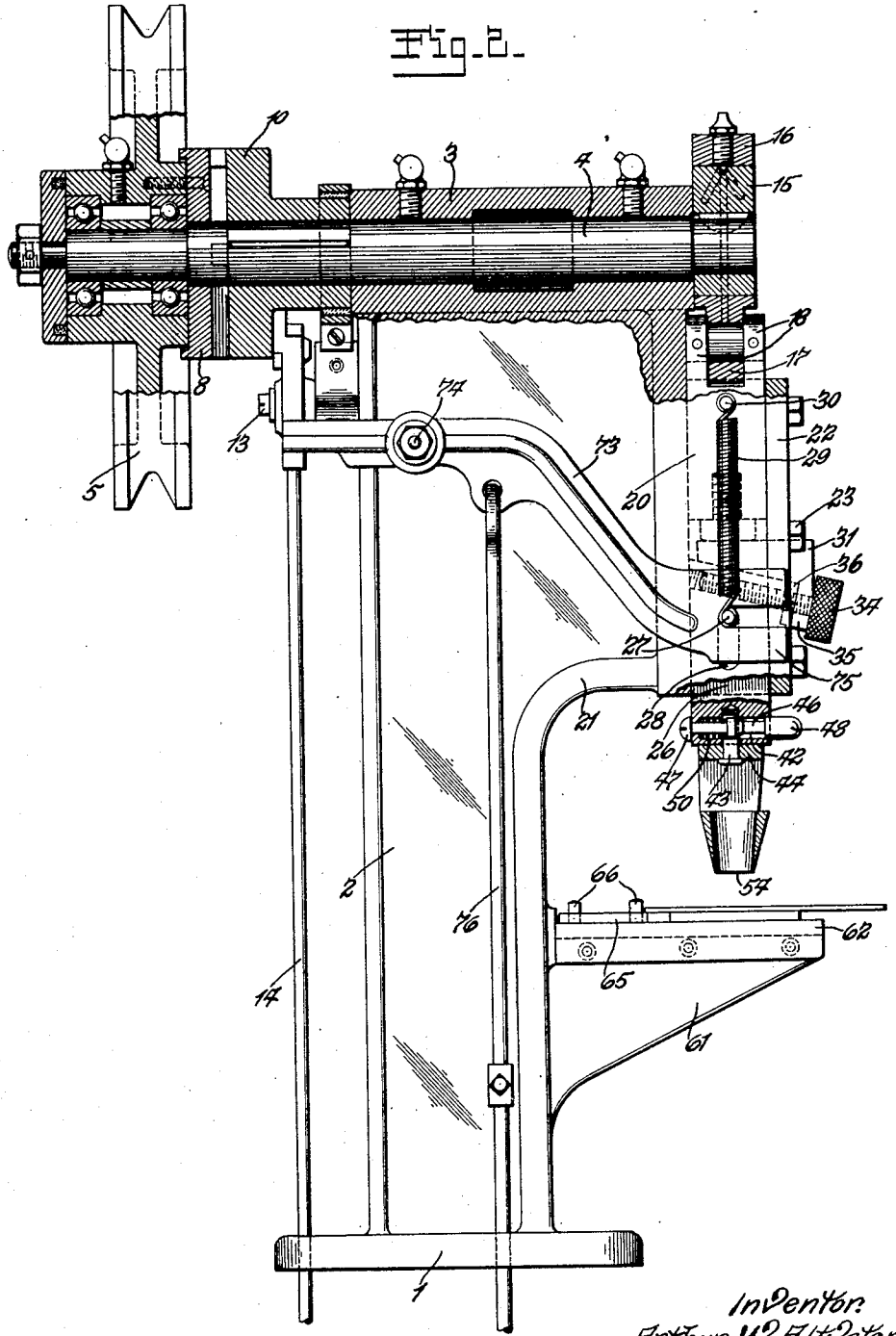
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MACHINE FOR ORNAMENTING SHOE PARTS

Filed March 27, 1930 4 Sheets-Sheet 2

Fig. 2.



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MACHINE FOR ORNAMENTING SHOE PARTS

Filed March 27, 1930 4 Sheets-Sheet 3

Fig. 3.

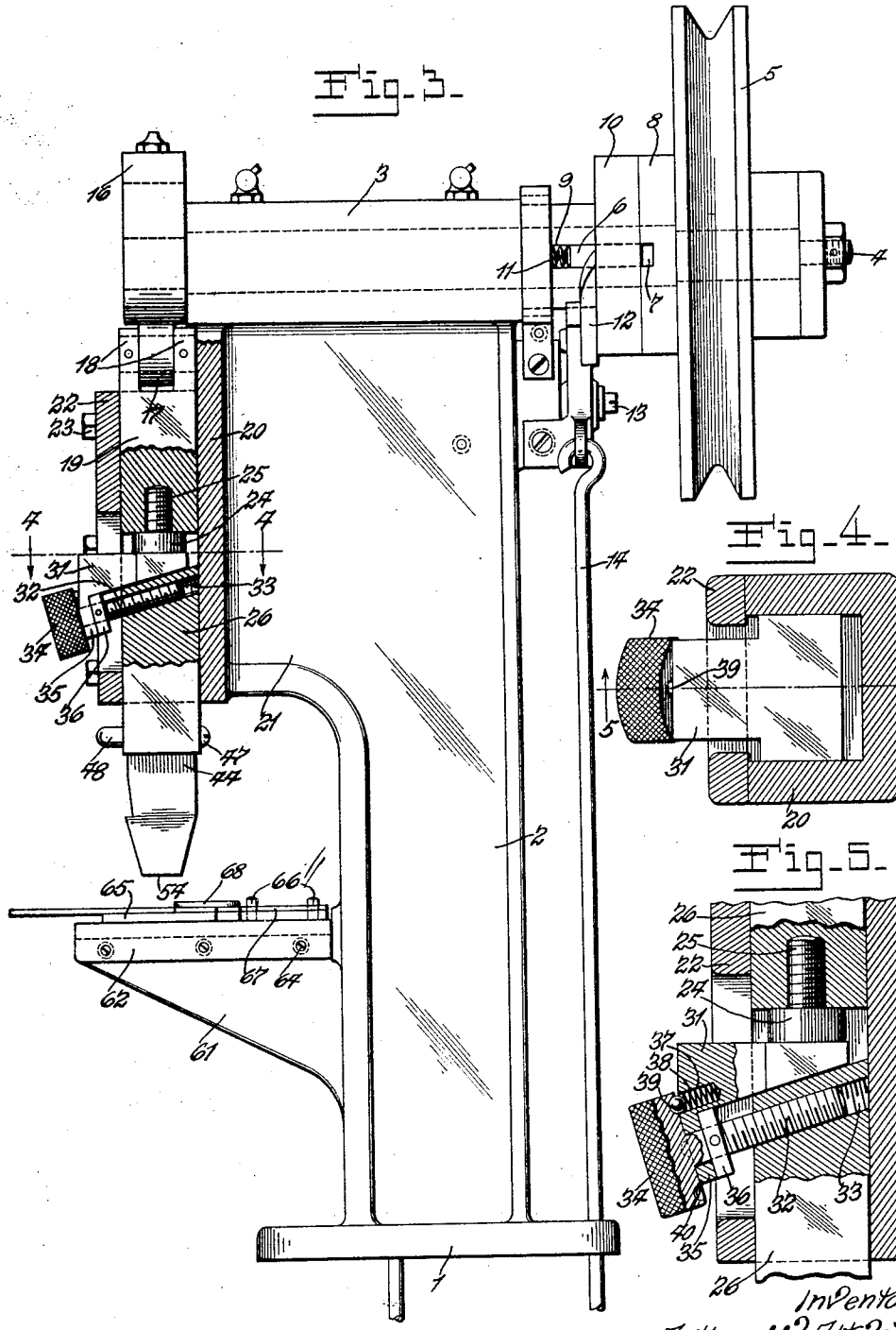


Fig. 4.

Fig. 5.

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Dec. 8, 1931. A. W. ALTVATER 1,834,919

MACHINE FOR ORNAMENTING SHOE PARTS

Filed March 27, 1930 4 Sheets-Sheet 4

Fig. 8.

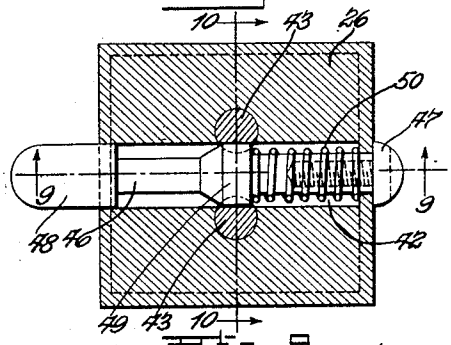


Fig. 6.

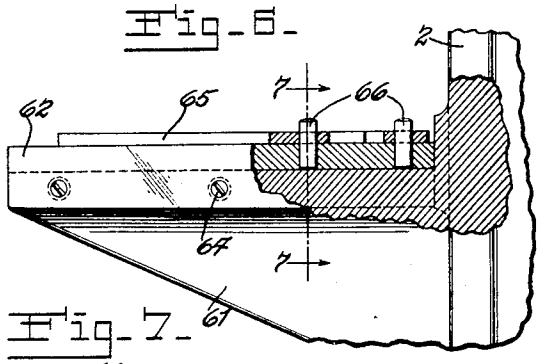


Fig. 7.

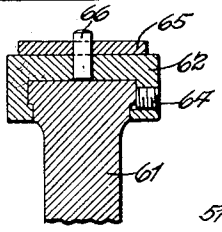


Fig. 9.

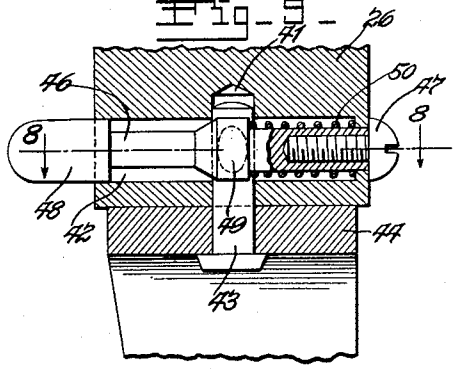


Fig. 11.

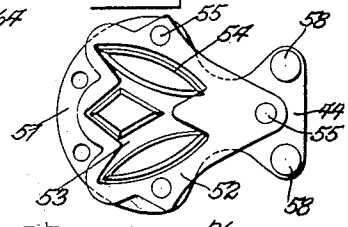


Fig. 10.

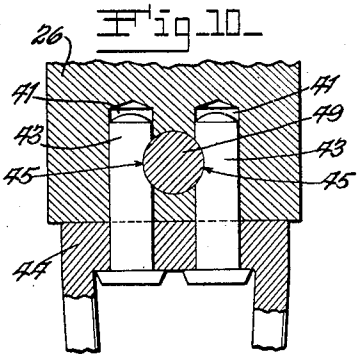


Fig. 12.

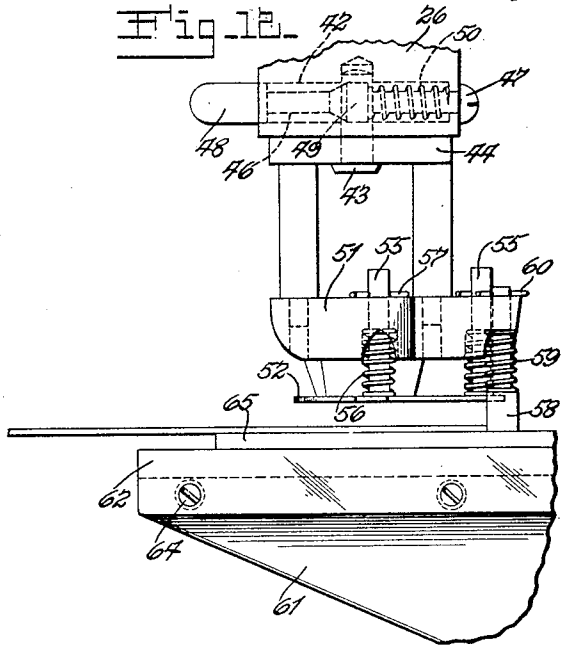


Fig. 13.

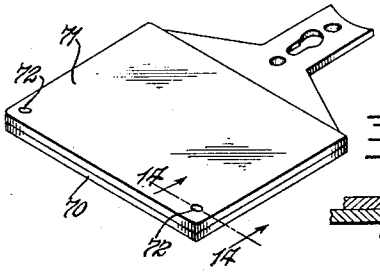
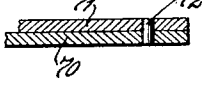


Fig. 14.



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Patented Dec. 8, 1931

1,834,919

UNITED STATES PATENT OFFICE

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MACHINE FOR ORNAMENTING SHOE PARTS

Application filed March 27, 1930. Serial No. 439,308.

This invention relates to machines for ornamenting shoe parts.

In the embodiment of the invention shown in the accompanying drawings, the machine is constructed and designed for operating on shoe parts arranged flatly upon an appropriate support, or to operate upon completed shoes and fitted shoe uppers having the parts thereof that are to be cut or trimmed or ornamented located upon the support preparatory for and during operation of the cutting, trimming or ornamenting devices.

The invention also comprises ornamenting devices supported above the support, in combination with means for pressing the cutting, trimming or ornamenting devices against the shoe parts that are to be ornamented, so that said cutting, trimming or ornamenting devices function as gages whereby the operator is guided in locating and positioning the parts that are to be ornamented. This machine may be operated to trim and cut out the linings of completed shoes to correspond with previously formed cut-outs in the uppers of the shoes, when the linings were left without cut-outs in the shoe uppers in order to reinforce and prevent stretching and distortion of the shoe uppers during the lasting and finishing operations. In these operations of trimming and forming cut-outs in the linings of completed shoes to correspond with previously formed cut-outs in the shoe uppers, the cutting edges of the dies are located in the cut-out openings or holes in the shoe uppers by preliminary manual operations of the dies, after which the dies are positively driven to cut through the linings of the completed shoes along the edges of the cut-outs or holes in the shoe uppers in which the dies had been inserted. In these operations, the dies function as gages to guide the operator in the location of the shoe uppers and completed shoes, by placing the cutting edges of the dies within the correspondingly shaped cut-outs or holes in the shoe uppers. The machine also comprises mechanism for forcing or driving the ornamenting devices properly to produce the desired ornamentations upon or in the shoe parts after the shoe parts have been located and positioned as above described, or otherwise.

The machine also comprises means for adjusting the ornamenting devices in proper relationship to the operating mechanism therefor and to the parts that are to be ornamented and the support upon which said parts are mounted. Thus, the machine comprises means for adjusting ornamenting dies in position to cut entirely through the shoe parts, or to produce demarcations upon or in the surfaces of the shoe parts, as desired.

Objects of the invention are to produce a machine embodying any or all of the foregoing structures, devices and mechanisms, and also to provide a machine that possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description, reference being made to the accompanying drawings, in which—

Fig. 1 is a front elevation of my improved ornamenting machine.

Fig. 2 is a side elevation with parts in section.

Fig. 3 is an elevation showing the opposite side of the machine from that shown in Fig. 2, parts being in section.

Fig. 4 is a cross-sectional view approximately on the line 4—4 of Fig. 3.

Fig. 5 is a vertical sectional view approximately on the line 5—5 of Fig. 4.

Fig. 6 is a view showing devices for holding the cutting plate in proper position to support the parts to be ornamented.

Fig. 7 is a sectional view on the line 7—7 of Fig. 6.

Fig. 8 is a horizontal sectional view on the line 8—8 of Fig. 9, showing means for supporting selected dies in connection with the adjustable die carrier.

Fig. 9 is a vertical sectional view on the line 9—9 of Fig. 8.

Fig. 10 is a vertical sectional view on the line 10—10 of Fig. 8.

Fig. 11 is a lower end elevation of an ornamenting die.

Fig. 12 is a side elevation of the ornamenting die attached to the die carrier of the ma-

chine and supporting gaging means for the work.

Fig. 13 is a perspective view showing another form of cutting plate.

Fig. 14 is a sectional view on the line 14—14 of Fig. 13.

Fig. 15 (Sheet 1) is a sectional view showing a wider cutting die support than that shown in the remaining views of the drawings.

Fig. 16 is a perspective view of a gage device used in connection with the cutting plate.

The machine shown comprises a rigid frame constructed and arranged to be located in a rigid position, so that the machine will not creep or move from its proper location during operation. The frame shown comprises a base 1 from which the upright frame part 2 rises. A bearing 3 is formed or supported at the upper end of the upright frame member 2 and constitutes a journal for a rotary shaft 4. A wheel 5, constituting a power transmission element, is mounted on one end of the shaft 4 and may be constantly rotated and controlled, so as to rotate the shaft 4 intermittently. This power transmission element 5 may rotate while the shaft 4 remains stationary, and may be caused to rotate the shaft intermittently and at any desired intervals by any appropriate clutch device. The complete clutch device is shown in my companion application Serial No. 334,934, filed January 25, 1929, and comprises a sliding clutch member 6 movable into and out of a notch 7 in the hub 8 of the power transmission device 5. The clutch member 6 is slidable in a slot 9 in a collar 10 that is rigid on the shaft 4. A spring 11 presses the clutch member 6 to clutching engagement in the notch 7, and said clutch member may be disengaged by a wedge lever 12 pivoted on a support 13 and operated by a link 14. This complete clutch device is clearly disclosed in my said companion application, and the details thereof are not herein claimed.

The front end of the shaft 4 has attached thereto an eccentric 15 which rotates within a ring 16 having a downwardly extended arm 17. The eccentric 15 is rotated by the shaft 4, but the ring 16 does not rotate. The arm 17 is embraced between a pair of arms 18 extending upwardly from a sliding plunger 19. The sliding plunger 19 is mounted in a guide 20 rigid with a forwardly extended portion 21 of the frame member 2. A plate 22 is attached to the guide 20 by screws 23 and forms the front portion of the guide so as to prevent the plunger 19 from oscillating improperly during operation.

My invention comprises means for varying the effective length of the plunger 19, the same comprising a block 24 having an axial extension 25 which is screwed into the lower end of the plunger 19. The block 24 may be turned in either direction, as required to extend or reduce the effective length of the plunger 19. By turning the block 24 in a direction to screw the stem 25 outwardly, the effective length of the plunger is increased and, by reversing the direction of rotation of the block 24, the effective length of the plunger is reduced. The screws 23 may be removed to permit removal of the plate 22, so as to afford access to all of the parts mounted in the guide 20.

A die carrier 26 is mounted for sliding movements in the guide 20 in axial alinement with and below the plunger 19. The lower end of the carrier 26 is below the lower end of the guide 20. The carrier 26 has pins 27 projecting from the side thereof through slots 28 in the sides of the guide 20. These slots 28 are of sufficient vertical length to permit all desired longitudinal movements of the die carrier 26. Springs 29 have their lower ends engaged with the pins 27 and their upper ends engaged with pins 30 that are rigid with the sides of the guide 20. The energy of these springs 29 is exerted and utilized to support the die carrier 26 yieldingly in its upper position, and to move said die carrier to its upper position after each operation thereof by the plunger 19.

My invention comprises means for varying the effective length of the die carrier 26, to provide for operating dies on work of different thicknesses and to provide for adjusting the die carrier so that the dies will not be damaged by any variation in length thereof. The upper end of the die carrier inclines downwardly and forwardly (Fig. 3) and constitutes a support for a block 31 having its lower side inclined the same as the inclination of the upper end of the die carrier 26, and having its upper surface flat and at right angles to the axis of the die carrier 26 and the plunger 19. A screw 32 is screwed into a threaded hole 33 formed in the die carrier 26 below and parallel with the inclined upper end of the die carrier. A knob or handle 34 is rigid with the outer end of the screw 32 and constitutes means for rotating said screw in both directions. The screw 32 is unthreaded for a distance inwardly from the knob 34, and said unthreaded portion is rotative within a bearing in an arm 35 extending downwardly from the outer end of the block 31. A collar 36 is rigidly secured to the screw 32 at the inner side of the arm 35. This construction provides means for permitting rotation of the screw 32 in the bearing arm 35 and for preventing the screw from moving longitudinally with respect to the bearing arm 35. At the same time, the screw 32 is permitted to be screwed into or out of the threaded hole 33 so as to slide the block 31 along the inclined upper end of the die carrier 26. It is clear enough that when the block 31 is moved inwardly, said block is raised by

the effect of the inclined surfaces of the die carrier and the block so as to increase the effective length of the die carrier; and when the block 31 is moved outwardly, the effective length of the die carrier is reduced.

The block 31 has therein a recess 37 enclosing a spring 38 and partly enclosing a latch member 39 which is projected outwardly so as to engage in any one of a series of indentations 40 in the inner surface of the knob 34. Thus, the part 39 constitutes a latch for preventing the knob 34 from accidentally turning, but permitting manual rotation of said knob to operate the screw 32. It is now clear that the knob 34, and thereby the screw 32, may be freely rotated manually, so as to adjust the block 31 to vary the effective length of the die carrier 26, as required to obtain proper adjustments for dies having varying length and for other purposes. This adjustability of the effective length of the die carrier 26 is highly desirable, as it avoids the necessity of making the dies with the great precision that would otherwise be required.

This die carrier has extending upwardly in its lower end a pair of spaced parallel holes 41 intersected by a transverse hole 42 formed between said holes 41 intermediate of their upper and lower ends. The holes 41 are designed and intended to receive the clutch extensions 43 projecting from one end of a die body 44 having its upper end abutting against the lower end of the die carrier 26. Each of the clutch members 43 has in its inner side an arcuate notch 45, which notches are concentric with the hole 42 when said clutch members 43 are extended into the holes 41 and the end of the die body 44 is against the end of the die carrier 26 (Fig. 10). The hole 42 contains a clutch device which is operable into and out of clutching engagement with the clutch members 43.

This clutch device comprises a stem 46 having a diameter less than the distance between the holes 41, so that when said stem 46 is between the clutch members 43, said clutch members are not engaged by said stem 46. One end of the stem 46 extends through a hole of reduced diameter at the inner end of the hole 42 and is thereby guided in its longitudinal movements. A screw 47 is screwed into the inner end of the stem 46 and constitutes an abutment to stop and limit outward movement of said stem 46. The front end of the stem 46 has thereon an enlarged portion 48 having a diameter about equal to the diameter of the hole 42 and having its inner portion extending into said hole 42. Thus, the stem 46 is axially supported in the hole 42 and is capable of longitudinal movements. A circumferential flange 49 is formed on the stem 46 intermediate of the ends of said stem, and has a diameter about equal to the diameter of the hole 42. When said flange 49 is between the clutch members 43, said flange is engaged in the notches 45, thus securely holding the die member in connection with the die carrier. A spring 50 encircles the stem 46 within the hole 42, having one end abutting against the flange 49 and the opposite end abutting against the inner end wall of the hole 42. The energy of this spring is exerted and utilized to move the stem 46 outwardly to the fullest extent permissible by the screw 47, in which position the flange 49 is in clutching engagement with the clutch members 43 of the die element. To release the flange 49 from clutching engagement with the clutch members 43, it is only necessary to press against the knob 48 of the stem 46, and thereby move the stem 46 inwardly until the flange 49 is beyond and out of engagement with the clutch members 43. Then, the die member may be removed from the die carrier and another die member attached to the die carrier.

The die member 44 is a frame having rigid with its lower end a die 51 for cutting through or into the parts to be ornamented, or for producing outlines upon or in the surfaces of the parts to be ornamented. This die may be equipped with a stripper plate 52 having therein an opening 53 through which the die edges 54 may be extended to ornament the shoe parts. This stripper plate is supported by pins 55 extending for sliding movements through the body of the die 51. Springs 56 encircle the pins 55 and actuate the stripper plate 52 downwardly. Extent of movement of the stripper plate by the springs 56 is limited by abutments 57 in connection with the pins 55 engaging the upper side of the die 51. This stripper plate may be constructed and arranged so that one or more of the edges thereof may be brought into registration or engagement with edges or outlines on the parts to be ornamented, so as to guide the operator in locating said parts for operation of the die. Or the die may be equipped with gages 58 actuated downwardly beyond the plate 52 by springs 59. Extent of movement of the gages 58 by the springs 59 is limited by abutments 60, which may be removed to permit detachment and replacement of the gages. In this embodiment of the invention, the gage for the parts to be ornamented is supported by the die.

The frame member 2 supports a rigid arm 61. The arm 61 projects forwardly a considerable distance below the forwardly extended frame part 21 and to a distance beyond the plane of any dies that may be mounted on the die carrier 26. This rigid arm 61 constitutes a support for removable and replaceable and interchangeable anvil heads 62, which may be of different and selected widths as required to support work of different sizes and shapes. For instance, when the machine is to be used for operating

upon fitted uppers, a relatively narrow anvil head 62 (Figs. 1, 6 and 7) is used so as to permit the fitted uppers to be placed around and to enclose the outer end of the anvil head. Thus, the parts of the fitted uppers that are to be ornamented are properly located above the anvil head and above the cutting plate preparatory for operation of the shaft 4 to drive the die into or against the fitted uppers. When the machine is to be used for operating upon flat pieces, or when larger and wider dies are to be used, the narrow anvil head 62 is removed and a wider anvil head 63 is attached to the arm 61. These anvil heads are secured in set positions on the arm 61 by set screws 64, which may be released to permit of the removal and interchange of anvil heads.

The anvil head 62 is equipped with means for holding in proper position thereon removable and interchangeable cutting plates 65. These cutting plates may be made of metallic or non-metallic substances which will not seriously damage or dull the dies forced into contact therewith when the machine is operated. The anvil head 62 has a pair of rigid upwardly extended pins 66 which are engaged in holes in the cutting plate 65. Thus, the cutting plate will be properly held upon the anvil head. When the dies are equipped with gages 58, it is unnecessary to provide gages on the cutting plates. But, when the dies are used that are not equipped with gages, it may be desirable to use gages on the cutting plate 65. A gage for this purpose may comprise a plate 67 having gage portions 68 to be engaged by edges of the parts to be ornamented, so as to guide the operator in the proper location of the work for operation of the ornamenting die.

When dies are to be used that have a greater width than the narrow anvil head 62, a wider anvil head 63 is attached to the arm 61 instead of the narrow anvil head 62. This wider anvil head 63 is equipped with pins 69 for engaging in holes in the rear ends of wide plates 70, which may be constructed the same as the cutting plates 65, or may be equipped with removable and replaceable cutting plates 71. The plates 71 are removably and interchangeably attached to the plates 70 by pins 72 projecting from the plates 70 into holes in the plates 71. Thus, when any plate 71 becomes damaged or defaced so that it is not suitable for further use, such damaged plate may be detached and another cutting plate secured to the plate 70 in the place of the plate that was damaged and unfit for further use.

A lever 73 is mounted on a horizontal pivot 74 projecting from the frame part 2 and has, at its forward end, a fork 75 embracing one of the pins 27. A link 76 is engaged with the lever 73 and is operative to move downwardly the forward end of said lever 73. When the forward end of the lever 73 is moved downwardly by the link 76, the die carrier 26 is moved downwardly in opposition to the springs 29. The link 76 may be operated by an ordinary foot pedal (not shown). Such downward movement of the die carrier is sufficient to move the stripper plate 52 and the die edge 54 into engagement with the work to locate it on the cutting plates. The pressure of the die upon the work by operation of the lever 73 is not so great as to prevent adjustment of the work, so that the die, when thus operated, serves to cooperate with the gages to guide the operator in positioning the work properly, and also serves the additional function of clamping the work on the cutting plate before operation of the die by the plunger 19. After the work and die have been thus adjusted, the shaft 4 is rotated by the power transmission device 5, thereby causing the eccentric 15 to move the driver 19 downwardly a sufficient distance to drive the die against or into or through the work to produce ornamentions on or in the work, or to cut out portions of the work, depending upon the type of die that is used.

The anvil head 62 and arm 61 are adapted to be extended into fitted shoe uppers and into completed shoes. These parts are designed to support shoes that are completed, with the exception of having the lining cut to form openings in the lining opposite previously formed openings in the shoe uppers. The linings are left uncut until after the shoe has been lasted and otherwise completed in order to prevent stretching and distortion of the shoe uppers. Such stretching and distortion of the shoe uppers would result if both the linings and the shoe uppers were cut before lasting. The otherwise completed shoes may be placed on the parts 62 and 61 and the dies 64 may be depressed to extend the cutting edges thereof into the correspondingly shaped cut-outs or openings in the uppers of completed shoes, thus enabling the operator to gage the completed shoes for the final power operation of the dies to form cut-outs in the linings. In such uses, the gages 68 are not needed.

The foregoing description of the invention comprises also a description of the operation of the machine, which will now be clearly understood by anyone familiar with the type of work which this machine is intended to perform. It is also clear that the construction and arrangement of the machine may be widely varied without departure from the nature and principle of the invention. I do not restrict myself unessentially in any respects, but what I claim and desire to secure by Letters Patent is:—

1. A machine for ornamenting shoe parts

comprising a rigid support, a die carrier, a rigid guide in which said die carrier is mounted for movements toward and from said support, a die supported by said carrier and extending toward said support, resilient means for supporting said die carrier in position for movement toward said support, a plunger guided by said guide for driving said die carrier toward said support, a rotary shaft, and means mounted on said shaft for supporting and operating said plunger.

2. A machine for ornamenting shoe parts comprising a rigid support, a die carrier, a rigid guide in which said die carrier is mounted for movements toward and from said support, a die supported by said carrier and extending toward said support, resilient means for supporting said die carrier in position for movement toward said support, a plunger guided by said guide for driving said die carrier toward said support, a rotary shaft, means mounted on said shaft for supporting and operating said plunger, means for moving said die carrier to engage the die with the shoe parts mounted on said support while said plunger remains stationary, and means for gaging the work on said support.

3. A machine of the character described comprising a rigid frame, a forwardly extending arm rigid with said frame, a rigid guide above said arm, a die carrier mounted for vertical sliding movements in said guide, means for supporting selected dies in connection with said die carrier, means for supporting selected cutting plates on said arm for supporting the work in position for operation of the dies that are supported by said die carrier, manipulative means for operating said die carrier to press the die against the work on the cutting plate, a rotary shaft, and a plunger mounted in and guided by said guide and supported and operated by said shaft for driving the die carrier and thereby the die to ornament the work.

4. A machine of the character described comprising a rigid frame, an arm rigid with and projecting forwardly from said frame, interchangeable members for supporting work of different classes above said arm, means for supporting cutting plates on said members, a rigid guide, a reciprocating die carrier mounted in said guide, a die supported by said die carrier, means for gaging the work between said die and said cutting plates, a rotary shaft, and a plunger supported and operated by said shaft and guided by said guide for driving said die carrier.

5. In a machine of the character described, a rigid support, means for engagng and holding selected cutting plates above said support to support work to be ornamented, a rotary shaft, a rigid guide between said shaft and said support, a longitudinally movable die carrier mounted in said guide for vertical movements downwardly toward and upwardly from said cutting plates, means for securing selected dies to said die carrier for operation thereby to ornament the work on the cutting plates, means for gaging the work on the cutting plates for operation of the dies, manual means for pressing the dies against the work on the cutting plates, a plunger mounted in and guided by said guide for driving said die carrier downwardly, and means for supporting and operating said plunger by said shaft.

6. In a machine of the character described, a rigid support, means for engaging and holding selected cutting plates above said support to support work to be ornamented, a rotary shaft, a rigid guide between said shaft and said support, a longitudinally movable die carrier mounted in said guide for vertical movements downwardly toward and upwardly from said cutting plates, means for securing selected dies to said die carrier for operation thereby to ornament the work on the cutting plates, means for gaging the work on the cutting plates for operation of the dies, manual means for pressing the dies against the work on the cutting plates, a plunger mounted in and guided by said guide for driving said die carrier downwardly, means for supporting and operating said plunger by said shaft, means for moving said die carrier upwardly, and means cooperating with said die carrier and said plunger for varying and limiting extent of upward movement of said die carrier.

7. In a machine of the character described, a rigid frame, a rigid guide in connection with said frame, a rotary shaft journalled in the upper portion of said frame, a plunger mounted in and guided vertically by said guide for vertical recpirocating movements, means for supporting and reciprocating said plunger by said shaft, a die carrier mounted for vertical reciprocating movements in the lower portion of said guide, and means for securing selected dies to the lower end of said plunger in a relationship in which the dies extend below said guide.

8. In a machine of the character described, a rigid frame, a rigid guide in connection with said frame, a rotary shaft journalled in the upper portion of said frame, a plunger mounted in and guided vertically by said guide for vertical reciprocating movements, means for supporting and reciprocating said plunger by said shaft, a die carrier mounted for vertical reciprocating movements in the lower portion of said guide, means for securing selected dies to the lower end of said plunger in a relationship in which the dies extend below said guide, means for supporting the work below the dies, and manual means for operating said die carrier to press the dies against the work on said support.

9. In a machine of the character described, a rigid frame, a rigid guide in connection with said frame, a die carrier mounted in and guided by said guide for sliding movements, means for securing selected dies to the lower end of said die carrier below said guide, a plunger mounted in said guide above said die carrier and held by said guide permanently in alinement with said die carrier, a shaft, an eccentric attached to said shaft, a ring supported by said shaft, and a pivotal connection between said plunger and said ring for operating said plunger by said ring and for holding said ring from rotating with said eccentric.

10. In a machine of the character described, a rigid frame, a rigid guide in connection with said frame, a die carrier mounted in and guided by said guide for sliding movements, means for securing selected dies to the lower end of said die carrier below said guide, a plunger mounted in said guide above said die carrier and held by said guide permanently in alinement with said die carrier, a shaft, an eccentric attached to said shaft, a ring supported by said shaft, a pivotal connection between said plunger and said ring for operating said plunger by said ring and for holding said ring from rotating with said eccentric, a lever pivotally connected with said die carrier, a connection for operating said lever to move said die carrier downwardly away from said plunger, and springs for moving said die carrier upwardly toward said plunger.

11. A machine of the character described comprising a support for the work, a plunger, a guide for said plunger, a die carrier mounted in said guide for sliding movements between said plunger and said support, an element abutting the end of said die carrier that is toward said plunger, and a rotary device for moving said element to and holding said element in selected positions to vary the effective length of said die carrier.

12. A machine of the character described comprising a rigid guide, a plunger mounted in said guide, a die carrier mounted in said guide in alinement with said plunger and having an inclined end toward said plunger, a block having an inclined surface engaging the inclined end of said die carrier, and means for securing said block in different positions against the end of said die carrier to vary the effective length of said die carrier.

13. In a machine of the character described, a rigid support, means for holding selected cutting plates above said support to support the work to be ornamented, a longitudinally movable die carrier mounted for vertical movements downwardly toward and upwardly from said cutting plates, means for securing selected dies to said die carrier for operation thereby to ornament the work on the cutting plates, means for gaging the work on the cutting plates for operation of the dies, manual means for operating said die carrier to press the dies against the work on the cutting plates, power means for driving the die to ornament the work, an element adjustable in different transverse positions across the end of said die carrier that is toward said power means, and means for moving said element to and holding said element in different transverse positions against said die carrier to vary the effective length of said die carrier and thereby compensate for variations in the lengths of the dies or variations in the thicknesses of said cutting plates.

14. In a machine of the character described, a rigid support, means for holding selected cutting plates above said support to support the work to be ornamented, a longitudinally movable die carrier mounted for vertical movements downwardly toward and upwardly from said cutting plates, means for securing selected dies to said die carrier for operation thereby to ornament the work on the cutting plates, means for gaging the work on the cutting plates for operation of the dies, manual means for operating said die carrier to press the dies against the work on the cutting plates, power means for driving the die to ornament the work, an element adjustable in different transverse positions across the end of said die carrier that is toward said power means, means for moving said element to and holding said element in different transverse positions against said die carrier to vary the effective length of said die carrier and thereby compensate for variations in the lengths of the dies or variations in the thicknesses of said cutting plates, and resilient means for moving said die carrier, and thereby the die on said die carrier, away from the work.

15. In a machine of the character described, a rigid support for the work, a rigid guide, a die carrier mounted in said guide for movement downwardly toward and upwardly from the work on said support, a plunger mounted in said guide above said die carrier, mechanism for operating said plunger to drive the die carrier downwardly and cause the die to ornament the work on said support, an element for varying the effective length of said die carrier to compensate for variations in the length of the dies supported by said die carrier, and a rotary device engaging said element and said die carrier for moving said element to and holding said element in different adjusted positions in connection with said die carrier.

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