

Sept. 17, 1935.

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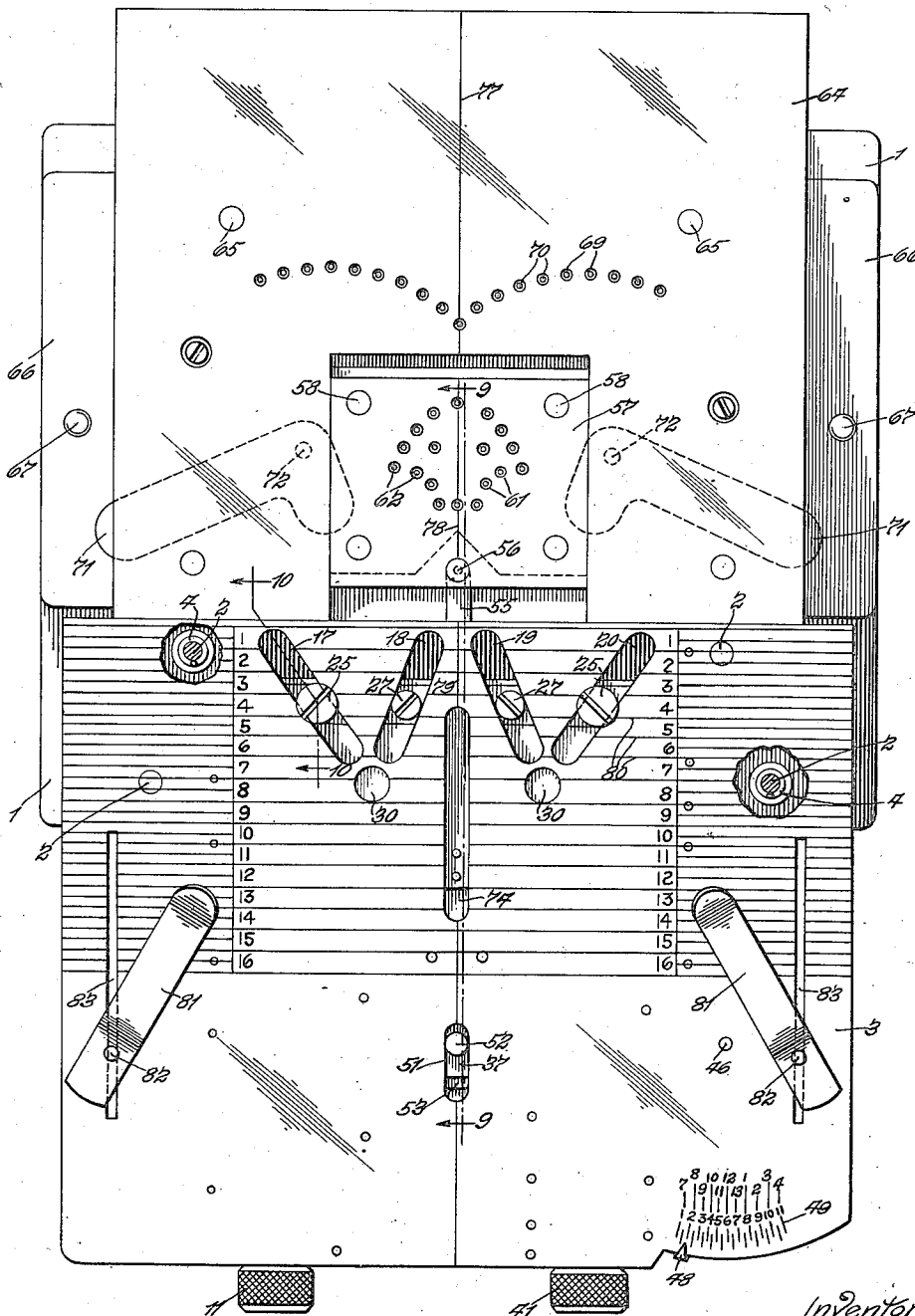
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ORNAMENTING DIE

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Fig-1-



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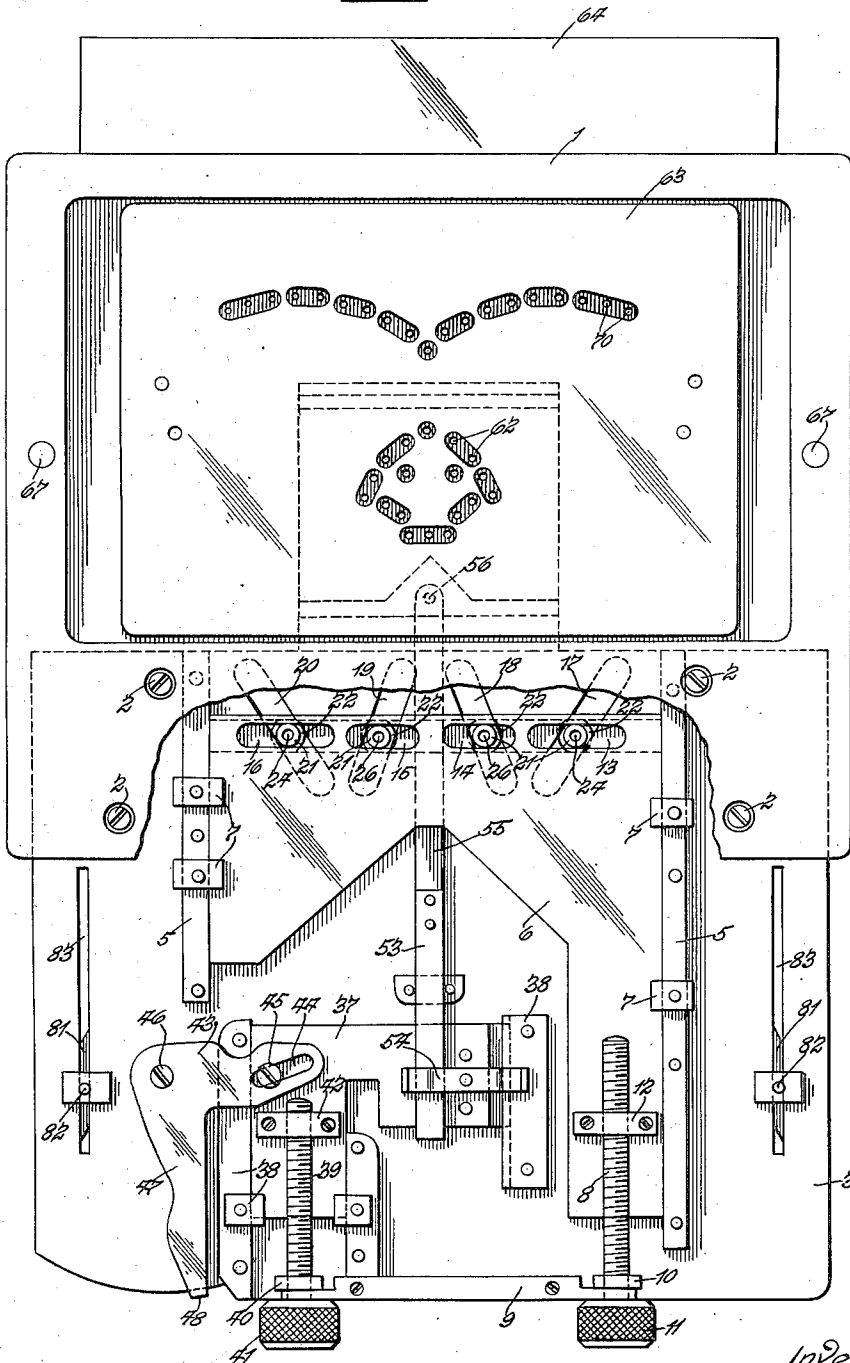
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Fig. 2.



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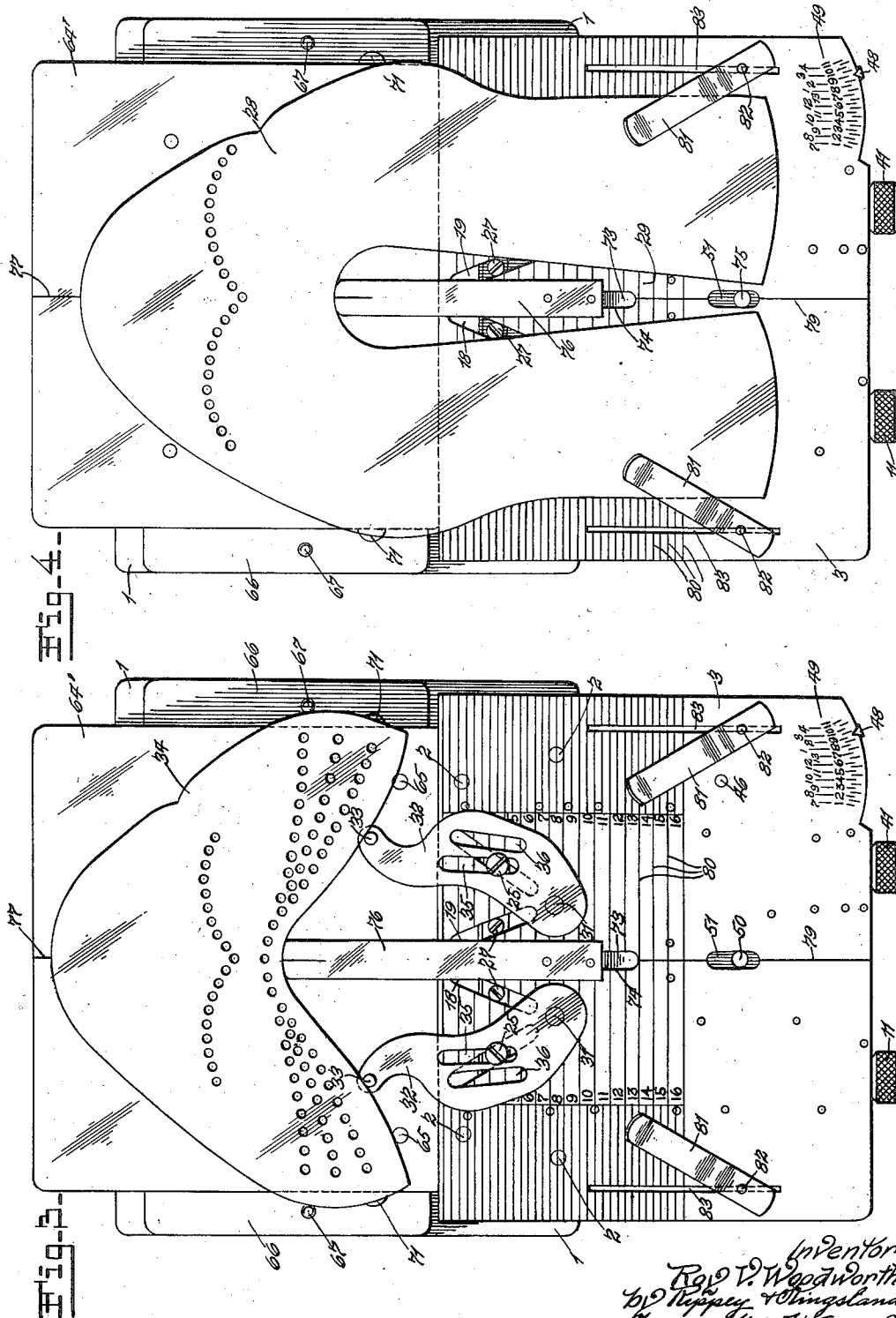
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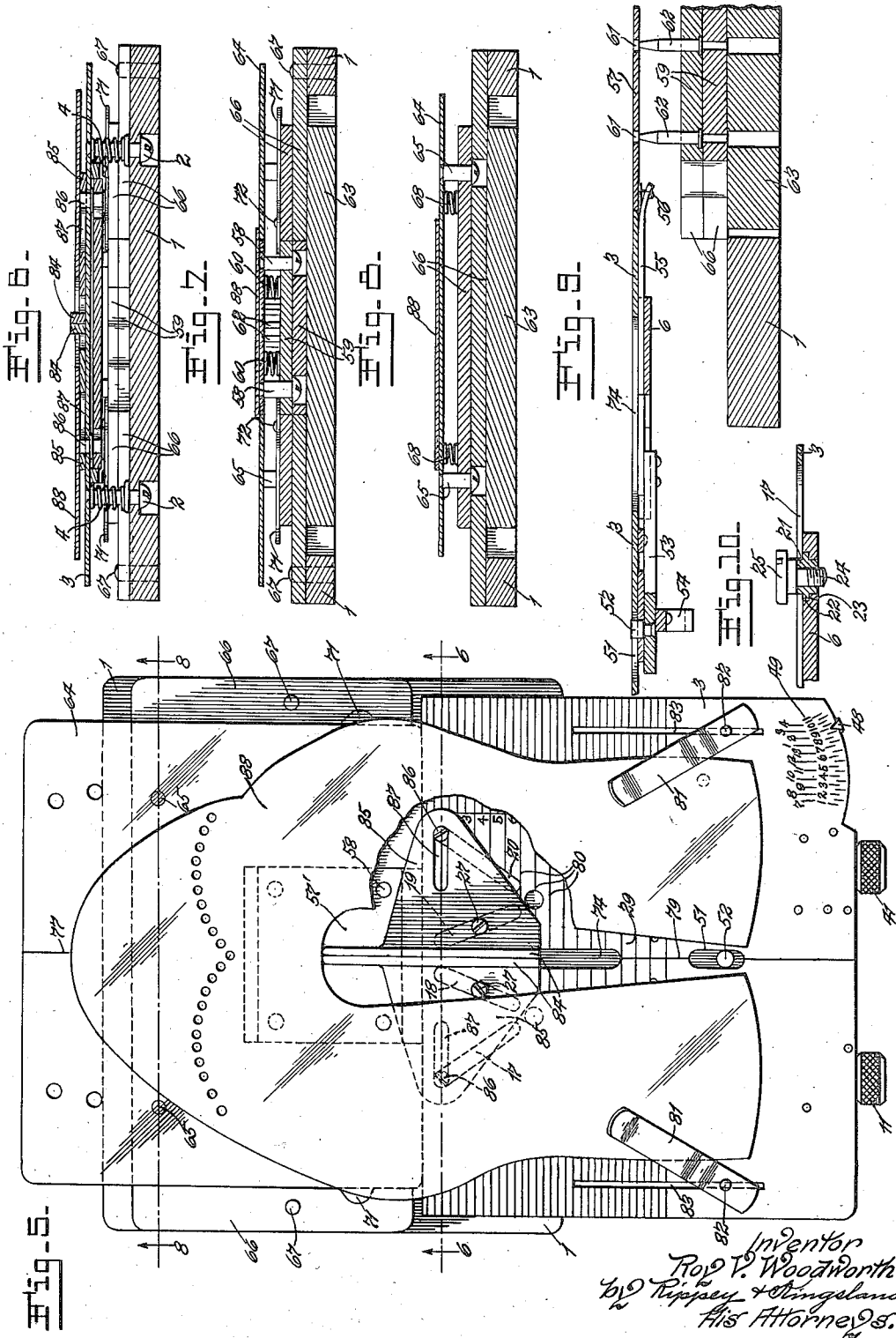
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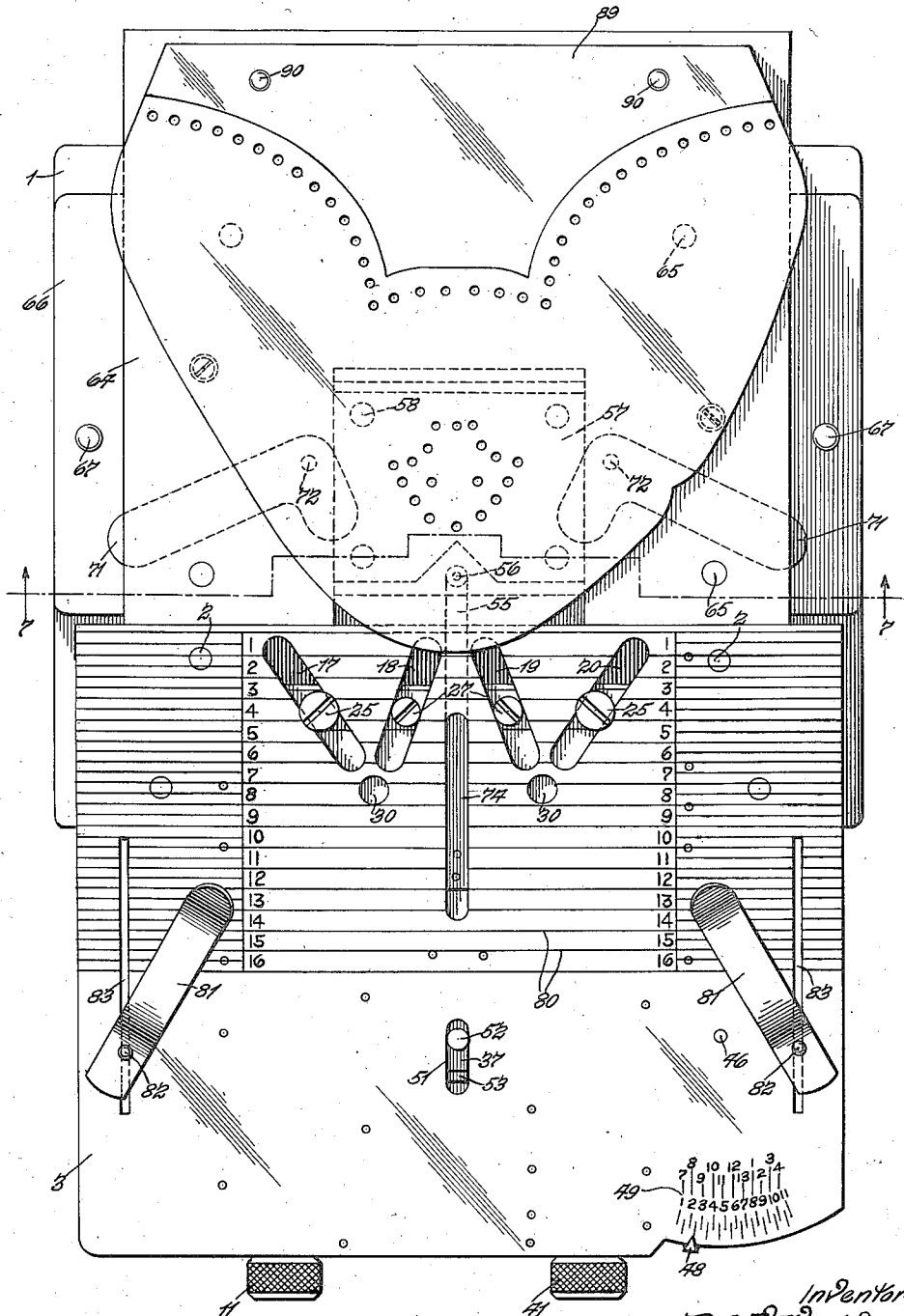
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5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

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ORNAMENTING DIE

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This invention relates to ornamenting dies for use in producing ornamental designs in or on shoe uppers.

Objects of the invention are to provide an improved ornamenting die including a rigid base having adjustable gage elements permanently connected therewith and operative to different adjusted positions to center and position and gage parts of shoe uppers of different sizes and forms; to provide means for operatively supporting additional gage devices and operating the same to different positions to broaden the range of use of the die to such an extent that the die may be used to ornament a wide variety of forms and shapes and sizes of shoe uppers; to provide means for supporting selected interchangeable dies in connection with the base whereby dies for producing numerous different ornamentations may be applied to the base to ornament the various forms and shapes and sizes of shoe uppers; to provide means for supporting said dies in rigid relationship on the base; to provide an additional adjustable die operative to different selected positions on the base with respect to the gage devices and other parts embodied in the invention; and to provide an improved ornamenting die embodying all of the advantageous features of construction and capable of the useful operations and adjustments herein disclosed, reference being made to the annexed drawings, in which—

Fig. 1 is a top plan view of an ornamenting die embodying many features of the present invention.

Fig. 2 is an inverted view with parts broken away.

Fig. 3 is a top plan view showing additional gage devices for centering and gaging particular types of shoe uppers in proper relationship to the die elements.

Fig. 4 is a top plan view showing a different form of gage device for centering and gaging in proper relationship to the die element a shoe upper having a long and narrow throat.

Fig. 5 shows another form of gage device for gaging and centering in proper relationship to the die element a shoe upper having a long and narrow throat.

Fig. 6 is a cross-sectional view on the line 6—6 of Fig. 5.

Fig. 7 is a cross-sectional view on the line 7—7 of Fig. 11.

Fig. 8 is a cross-sectional view on the line 8—8 of Fig. 5.

Fig. 9 is a cross-sectional view on the line 9—9 of Fig. 1.

Fig. 10 is a enlarged sectional view on the line 10—10 of Fig. 1.

Fig. 11 is a plan view of the invention having a gage and centering device for gaging and centering a shoe upper of the form and in the position shown.

The rigid base 1 is in the form of an open frame (Fig. 2) having holes through which a number of headed posts 2 extend upwardly for vertical sliding movements, the heads on said posts 2 preventing the posts from being withdrawn upwardly from the holes. The upper ends of the posts 2 are attached to a plate 3 (Fig. 1) and springs 4 are mounted around the posts 2 between the base 1 and the plate 3 and yieldingly support said plate 3 in its uppermost position.

A pair of parallel guide strips 5 are attached to the underside of the plate 3, and a plate 6 is mounted between said strips 5 for forward and rearward sliding movements, and may be supported against the underside of the plate 3 by arms 7 attached to the strips 5. A screw 8 is rotatively supported in a member 9 attached to the underside of the forward end of the plate 3 and held from longitudinal movements by a washer 10 attached thereto at the inner side of the member 9 and a handle 11 attached thereto at the outer side of the screw 8 (Fig. 2). The screw 8 is screwed through a bracket 12 attached to the plate 6. These devices constitute means for moving the plate 6 forwardly and rearwardly according to the direction of rotation of the screw 8 by manually engaging and rotating the handle 11.

The rear end of the plate 6 is formed with a number of alined transverse slots 13, 14, 15 and 16 which cross angularly disposed slots 17, 18, 19 and 20, respectively, formed in the rear portion of the plate 3. The slots through the plate 3 extend obliquely forwardly and rearwardly, while the slots through the plate 6 extend transversely, as shown.

A collar 21 is engaged in each pair of said intersecting slots, the lower ends of said collars extending into the slots in the plate 6, and the upper ends of said collars extending into the slots in the plate 3. These collars are held and supported by a polygonal circumferential flange 22 on each collar of greater diameter than the width of any of the slots and extending between the plates 3 and 6 into grooves 23 in the upper side of the plate 6 at the sides of the slots. These flanges 22 not only support the collars 21, but prevent said collars from rotating. Screws have their threaded stems 24 extending through the

slots 17 and 20 and screwed into the collars 21 at said slots, and have their heads 25 rising considerably above the upper surface of the plate 3. Other screws comprising threaded stems 26 extending through the slots 18 and 19 and screwed into the collars 21 at said slots have their heads 27 extending considerably above the upper surface of the plate 3.

The relationship of the slots 17, 18, 19 and 20 is clearly shown in Fig. 1 of the drawings, the slots 17 and 20 constituting one cooperating pair and diverging rearwardly, while the slots 18 and 19 converge rearwardly. Accordingly, when the plate 5 is moved forwardly, the screw heads 25 are likewise moved forwardly along converging lines and the screwheads 27 are moved forwardly along diverging lines. Rearward movement of the plate 5 moves the screwheads 25 rearwardly along diverging lines and the screwheads 27 rearwardly along converging lines. The screwheads 25 constitute gages for various forms and shapes and sizes of shoe uppers. The screws 24 may be removed to permit shoe uppers of the shape, form and size of the shoe upper 28 (Fig. 4) having a long throat 29 to be placed on the plate 3 with the side edges of the throat 29 in gaging contact with the screwheads 27.

The plate 3 is formed with holes 30 adjacent to the forward ends of the slots 17, 18, 19 and 20 (Fig. 1). These holes 30 are designed and intended to receive pivots 31 on swinging gage plates 32 having upwardly extended gage pins 33 for engagement with the throat edge of shoe uppers having the form, shape and size of the shoe upper 34 (Fig. 3). Each gage plate 32 has a pair of slots 35 and 36 through either of which the adjacent screw 24 may be passed to operate the gage plate 32 about the pivot 31 when the screw 8 is turned and the plate 5 operated by said screw in the manner described.

A plate 37 is supported for sliding movements at the underside of the plate 3 by combined supports and guides 38. A screw 39 is supported by the member 9 and is held from longitudinal movements by a collar 40 at the inner side of said member 9 and a handle 41 at the outer side of said member 9. The inner end of said screw 39 is screwed through a bracket 42 attached to the plate 37, whereby rotation of said screw 39 will move the plate 37 forwardly or rearwardly, depending upon the direction of rotation of the screw 39. An angular lever comprising an arm 43 having a slot 44 through which a screw 45 extends is supported on a pivot 46 attached to the plate 3. The screw 45 is attached to the plate 37 so that forward and rearward movement of said plate 37 will oscillate the arm 43. An arm 47 formed in the same piece with the arm 43 extends forwardly and has on its end an upwardly and rearwardly extended point 48 (Fig. 1) operating adjacent to a graduated scale 49 on the upper side of the plate 3. The plate 37 is formed with a hole 50 (Fig. 3) in registration with a slot 51 through the plate 3. This hole 50 is designed and intended to receive a pin or lug 52 (Fig. 1) attached to a bar 53 (Fig. 2) movably supported by a pivoted support 54.

It is now clear that forward and rearward movement of the plate 37 will move the bar 53 forwardly and rearwardly and will operate the gage pointer 48 in synchronism therewith. The bar 52 has a rearward extension 55 operating in a channel or groove in the upper part of the plate 6 below the plate 3. The rear end of the extension 55 is operatively engaged with a pin 56

rigid with a stripper plate 57 attached to guide pins 58. The guide pins 58 extend for vertical movements through a body comprising the two rigidly connected superimposed plates 59 (Fig. 7). A number of strong springs 60 below the stripper plate 57 yieldingly support said plate. The plate 57 is provided with numerous holes 61 forming an ornamental outline and are in registration with die members 62 rigid with the plates 59. The springs 60 normally support the stripper plate 57 above the upper cutting ends of the die members 62, but will yield to permit the plate 57 to be pressed downwardly to cut into or through any of the shoe uppers supported on the die. This die may be moved forwardly and rearwardly by operation of the screw 39 to different adjusted positions with respect to the gage elements that have been described and with respect to an additional die device to be presently described.

The die body 59 is mounted for sliding movements on a base 63 designed and adapted to be placed within the rear portion of the base frame 1, as shown. A stripper plate 64 is attached to guide pins 65 (Fig. 3) extending for vertical movements through the superstructure 66 attached to the base plate 63 and having holes receiving upwardly extended pins 67 rigid with the base frame 3 (Figs. 5 and 7). Springs 68 mounted on the superstructure 66 yieldingly support the plate 64 in the same plane with the plate 57. The body 59 is located in a space in the structure 66 and the plate 57 is in a cut out space in the plate 64. The plate 64 has therethrough numerous holes 69 in ornamental relationship above the die members 70 of familiar construction.

It is now clear that the die of which the stripper plate 57 is a part may be moved forwardly and rearwardly with respect to the die of which the plate 64 is a part merely by rotating the screw 39. The connections described will hold the movable die in its different adjusted positions but, on some occasions and in some uses of the device, it is desirable to remove the bar 53—55 and apply different gages in the place thereof. In such cases, the movable die is removed and a unit, comprising a plate 57' supported in all respects like the plate 57, is substituted in the place of the die that includes the plate 57 and is held in place by resilient clamps 71 (Figs. 1 and 7) pivoted to the die superstructure 66 by pivots 72. The extended ends (Fig. 7) of the resilient clamps 71 may be manually engaged and said clamps thereby operated into and out of clamping engagement with the parts 59 of the movable die or the substituted structure. When the clamps 71 are engaged with the movable die or the substituted structure, said movable die or substituted structure will be held in its proper position. Or an ornamenting die, comprising a stripper plate 64' may be used without the adjustable die or the substitute therefor.

My invention comprises means whereby gages may be operatively connected with the adjusting plate 37 in the place of the bar 52. As shown in Fig. 4, a narrow bar 73 extends through an elongated slot 74 through the plate 3 and has a pin 75 engaged in the hole 50 in said plate 37. The narrow bar 73 extends upwardly through the slot 74 and has a gage member 76 attached thereto and extending rearwardly between the screwheads 27 and having its rear end above the stripper plate 57 in position to be engaged by the forward end wall of the throat 29 in 75

shoe uppers having long throats, as shown in the shoe upper 23 (Fig. 4). The gage 76 may be moved forwardly and rearwardly to different adjusted positions with respect to the movable die of which the gage plate 57 is a part. In this form of the invention, the gaging screw-heads 27 and the gage 76 constitute means whereby shoe uppers 23 may be placed in proper relationship to the relatively adjustable dies. A centering line 77 is formed on the stripper plate 54 in continuation of a centering line 73 on the stripper plate 57 and a centering line 79 on the stripper plate 3.

It should now be apparent that rotation of the screw 8 will operate the gage parts 25 and 27 along their respective slots and across designated gage lines 30 indicating sizes of shoes. And rotation of the screw 39 will move the gage pointer 43 in cooperating relationship to the scale 49, and will move the movable die 57, etc. to cooperative relationship with respect to the stationary die 59, etc., in accordance with the different sizes of shoes. Or, when the movable die 57, etc. is held in an adjusted position by the clamps 71, selected gages 76 will be operated in cooperating relationship with the gage 43 to assist in placing and centering shoe uppers of the selected sizes. The long shoe uppers 23 may be held in their centered positions by spring clamps 31 mounted on pivots 32 which extend through slots 33 in the plate 3 to permit said clamps 31 to be moved forwardly and rearwardly to selected adjusted positions for engagement with shoe uppers of various sizes.

Selected gages may be connected with the plate 6 through the medium of the collars 21 to be held thereby. As shown in Fig. 5, two gage members, each comprising a raised inner portion 34 and an outer portion 35 of reduced thickness, are operatively connected with the plate 6 by screws 36 passing through slots 37 in the reduced thickness portions 35 and engaging the collars 21 that operate along the slots 17 and 20, and by screws 36' passing through the portions 34 and engaging in the collars 21 that operate along the slots 18 and 19. The side edges of the raised parts 34 match and are engaged by the side walls of the throat of the shoe upper 38 which thereby centers and locates the shoe upper 38 in exactly the proper position for operation of the presser member of the machine to cause the dies 62 and 70 to cut into or through or indent the desired ornamental outlines and configurations on or in the shoe upper. As shown in Fig. 5, these gage members are in their extreme rear positions and have their inner edges abutting. By moving the plate 6 forwardly, these gage members will be moved forwardly and laterally away from each other into spaced relationship. Thus, these gage members may be adjusted for shoe uppers having throats of various widths.

If desired, a gage device 89 may be attached to the rear upper surface of the stripper plate 64 to be engaged by the rear edges of shoe uppers placed on said stripper plate in reverse position from the positions of the shoe uppers shown in the preceding views of the drawings, as should be understood by reference to Fig. 11. These gage blocks 89 are held by pins 90 and are easily removable and replaceable and interchangeable, as desired.

It is believed that the foregoing description of the construction of this improved ornamenting die makes clear also the mode of operation and use thereof. It should be apparent that the

die obtains all of its intended objects and purposes and is capable of a wider range of use than dies in which the die elements are not interchangeable or in which the die elements are not relatively adjustable and in which the gages are incapable of the advantageous operation and use of the gages herein disclosed. The invention may be varied in numerous other particulars than those specifically mentioned without departure from the nature and principle thereof.

I claim:—

1. An ornamenting die comprising a rigid base, a supporting plate attached to said base, a die base removably supported by said first named base, die elements rigid with said die base, a stripper plate removably supported by said die base in approximate alinement with said supporting plate, and a gage device supported above and by said supporting plate for movement toward and from said stripper plate.

2. An ornamenting die comprising a rigid base, a supporting plate attached to said base, a die base removably supported by said first named base, die elements rigid with said die base, a stripper plate removably supported by said die base in approximate alinement with said supporting plate, a gage device supported above and by said supporting plate for movement toward and from said stripper plate, and mechanism supported below said supporting plate for moving said gage device toward and from said stripper plate.

3. A device of the character described comprising a rigid base, a supporting plate supported above said base, an ornamenting die supported by said base rearwardly from said supporting plate, a stripper plate cooperating with said ornamenting die at the rear of said supporting plate, gage devices above said supporting plate, and means for moving said gage devices along diverging lines toward said ornamenting die.

4. A device of the character described comprising a supporting plate, gage devices above said supporting plate, mechanism for moving said gage devices rearwardly along said supporting plate and laterally with respect to each other, and means for supporting selected ornamenting dies at the rear of said supporting plate.

5. A device of the character described comprising a supporting plate, means for supporting selected ornamenting dies beyond one edge of said plate, gage devices above said supporting plate, and mechanisms carried by said supporting plate for moving said ornamenting dies and said gage devices relatively.

6. A device of the character described comprising a supporting plate, means for supporting selected ornamenting dies beyond one side of said plate, gage devices above said supporting plate, and mechanism carried by said supporting plate for moving said gage devices relatively to each other and toward and from said dies.

7. A device of the character described comprising a supporting plate, means for supporting selected ornamenting dies beyond one side of said plate, gage devices above said supporting plate, and mechanism carried by said supporting plate for moving said dies toward and from said gage devices.

8. A device of the character described comprising a supporting plate, an ornamenting die supported in cooperative relation to said supporting plate, mechanism carried by said supporting plate for moving said die toward and from said supporting plate, and gage devices on

said supporting plate for gaging the work with respect to said ornamenting die.

9. A device of the character described comprising a supporting plate, an ornamenting die supported in cooperative relation to said supporting plate, mechanism carried by said supporting plate for moving said die toward and from said supporting plate, gage devices on said supporting plate for gaging the work with respect to said ornamenting die, and mechanism for moving said ornamenting die and said gage devices to different adjusted positions for work of different forms and shapes.

10. A device of the character described comprising two relatively adjustable ornamenting dies, mechanism for supporting and gaging the work with respect to said two dies, means for moving one of said dies to different adjusted positions with respect to the other, and plural adjustable gage devices for gaging various styles and shapes of work with respect to said dies irrespective of the relative adjusted positions of said dies.

11. A device of the character described comprising a supporting plate, an ornamenting die supported in cooperative relation to said supporting plate, a movable plate supported below said supporting plate, gage devices supported by said movable plate and extending above said supporting plate, means for moving said movable plate and thereby said gage devices, and means for guiding said gage devices when they are moved by said movable plate.

12. A device of the character described comprising a supporting plate having rearwardly diverging guide slots therein, a movable plate supported below said supporting plate, gage devices connected with said movable plate and extending through said slots and above said supporting plate, means for moving said movable plate to different adjusted positions, and means for supporting selected dies in cooperative relation to said gage devices.

13. A device of the character described comprising a supporting plate having rearwardly diverging guide slots therein, a movable plate supported below said supporting plate, gage devices connected with said movable plate and extending through said slots and above said supporting plate, means for moving said movable plate to different adjusted positions, means for supporting selected dies in cooperative relation to said gage devices, and means for moving said dies relatively to different adjusted positions.

14. A device of the character described comprising a supporting base, a pair of relatively adjustable dies supported by said base, a sup-

porting plate, gage elements supported by said plate for gaging the work with respect to said dies, and mechanism supported by said plate for moving said gage elements and said dies relatively to different adjusted positions.

15. A device of the character described comprising a supporting base, a pair of relatively adjustable dies supported by said base, a supporting plate, gage elements supported by said plate for gaging the work with respect to said dies, mechanism supported by said plate for moving said gage elements and said dies relatively to different adjusted positions, and means on said supporting plate indicating various sizes of work to be supported thereby and gaged by said gage elements.

16. A device of the character described comprising a base, an ornamenting die supported by said base, an additional ornamenting die supported by said base for movement toward and from said first ornamenting die, a supporting plate in front of said dies for supporting a part of the work in cooperative relation to said dies, and means supported by said supporting plate for moving said additional die with respect to said first named die.

17. A device of the character described comprising a base, an ornamenting die supported by said base, an additional ornamenting die supported by said base for movement toward and from said first ornamenting die, a supporting plate in front of said dies for supporting a part of the work in cooperative relation to said dies, means supported by said supporting plate for moving said additional die with respect to said first named die, and gage mechanism supported by said additional plate for gaging different sizes and forms of work with respect to said dies.

18. A device of the character described comprising an ornamenting die, plates for supporting shoe uppers in position to be operated on by said ornamenting die, gage members supported by one of said plates, and mechanism supported by said one plate for moving said gage members toward and from said die and laterally toward and from each other.

19. A device of the character described comprising an ornamenting die, a stripper plate in cooperative relation thereto, a supporting plate beyond said stripper plate, gage devices supported by said supporting plate, a movable plate supported below said supporting plate, mechanism for operating said movable plate, and means for moving said gage devices by said movable plate to different adjusted positions with respect to each other and with respect to said die.

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