May 16, 1933. B. W. FREEMAN 1,908,895

SHOE ORNAMENTING DIE

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Fig. 1.

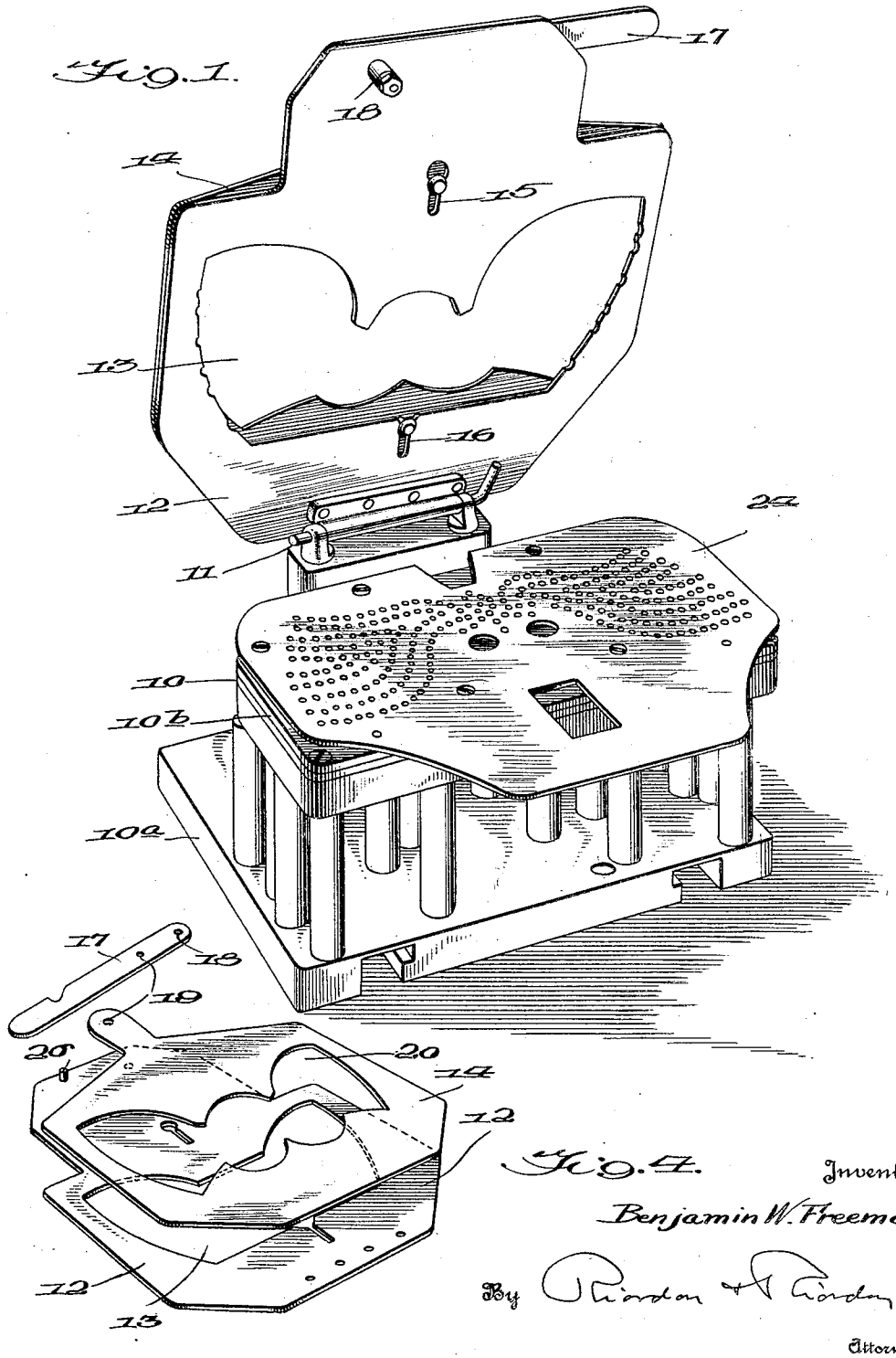


Fig. 4.

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Fig. 2.

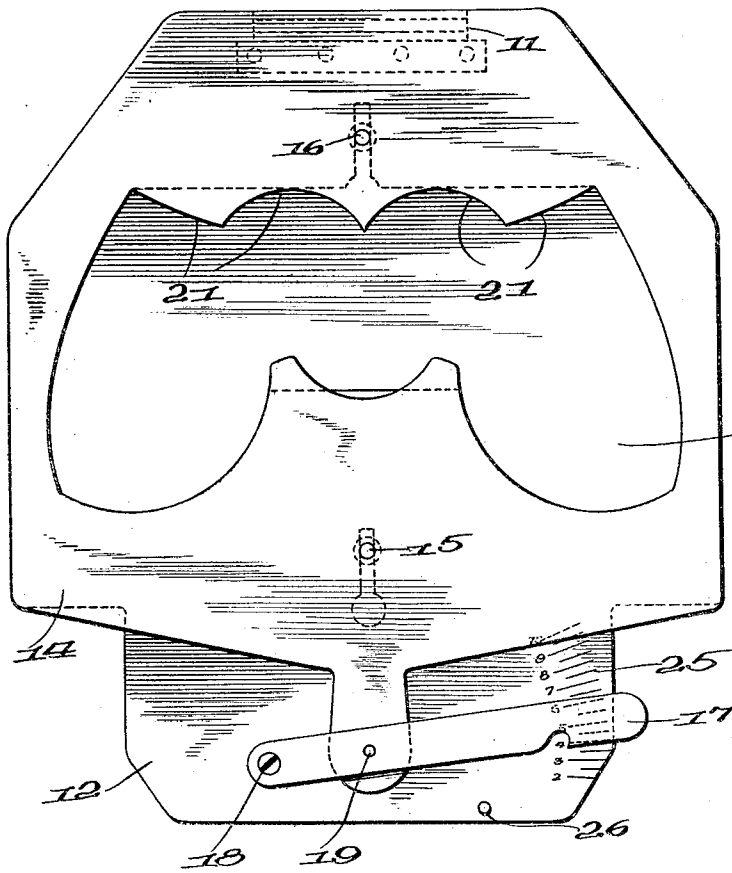
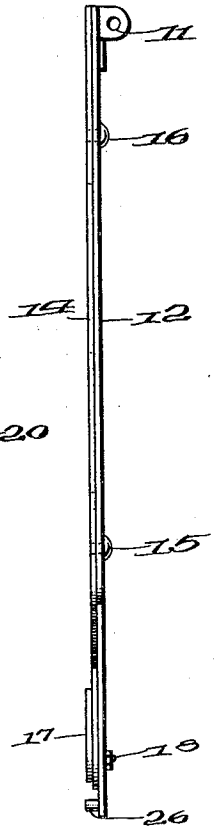


Fig. 3.



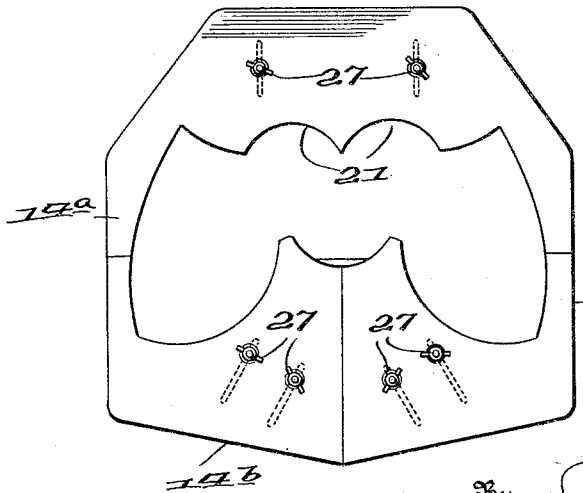


Fig. 5.

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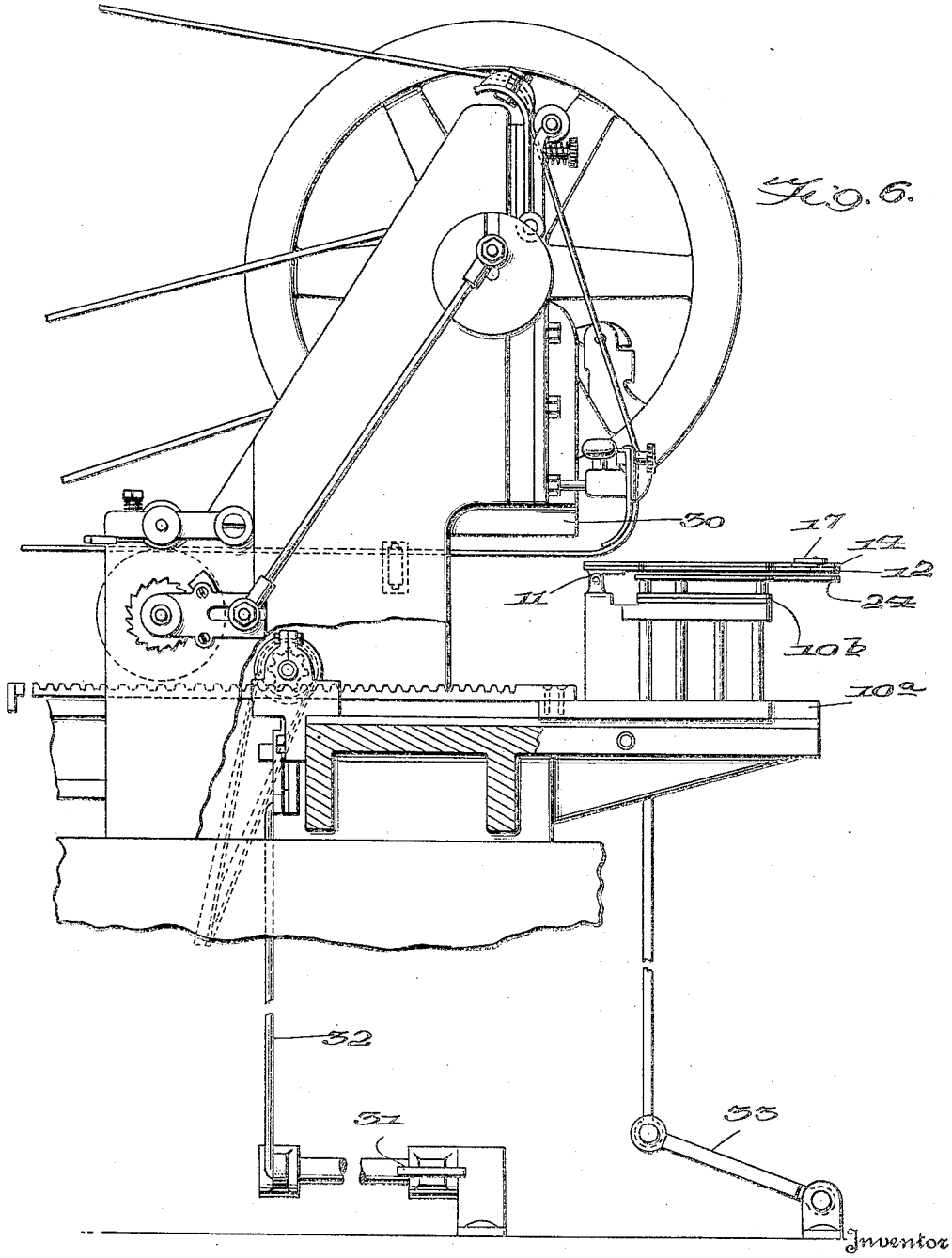
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Fig. 6.



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Patented May 16, 1933 1,908,895

UNITED STATES PATENT OFFICE

BENJAMIN W. FREEMAN, OF CINCINNATI, OHIO

SHOE ORNAMENTING DIE

Application filed April 16, 1931. Serial No. 530,625.

The present invention relates to shoe ornamenting machinery, and more particularly to improvements in gauges for properly aligning and positioning work, such as fitted uppers, relative to an ornamenting die operating in the machine, to mark, perforate, impress or cutout the work piece.

In ornamenting fitted uppers, or for that matter, flat work, by perforating, cutting out designs, marking or the like, it has been customary to position the work in the machine by means of a gauge member which is provided with a portion adapted to cooperate with a seam, edge or mark of some sort on the work, and which gauge member is mounted in definite relation to the ornamenting or marking die.

This gauge member frequently takes the form of a mask, which is placed over the work, so that an edge of the mask may be used as a gauging or aligning means.

Reference may be made to my prior Patents Nos. 1,716,954 and 1,681,033, as illustrative of one style of shoe ornamenting machine which uses such a gauging mask, and a cutting die, and also to my co-pending applications Serial No. 478,264, filed August 27th, 1930, and Serial No. 515,346, filed February 12th, 1931, as illustrative of a different style of shoe ornamenting machine utilizing such mask and die.

A problem arises, in the use of these masks, due to the fact that the work will vary in size, from time to time. Shoe parts are graded in accordance with desired size of finished shoe, and, because of the fact that the gauge bears a predetermined relation to the die, it is evident that as the size varies the relative position of a cutout or perforation in the work will vary, due to the fact that a gauge having a fixed relation to the die and to a permanent mark on the work is being used. Some manufacturers have attempted to overcome this difficulty by using a plurality of dies, one for an early portion of the run of graded work, and another for a later portion thereof. Other efforts to properly locate the perforations or cutout in the work have been attempted in flat bed machines by the use of gauges, adjustable to the machine whereby the flat work could be ornamented with the various sizes being placed on the die, and located by moving the gauges with the parts to be ornamented changing for size.

An object of the present invention is to provide a mask having a gauging edge which is movable, to compensate for relatively different locations of the ornamentation on various sizes of work.

Another object is to provide a mask having two superposed sections movably connected to each other with a lever arrangement for moving the one section relative to the other, depending on the size of the work to be treated.

Still another object is to provide such a gauge, calibrated in accordance with predetermined sizes of work.

A further object is to provide a gauge structure which may be used with fitted uppers as well as flat work, it being considered that heretofore there has been no way of locating the ornamentation in the proper place if the fitted work is not held for the die.

It is contemplated that either an inside edge of a cutout portion of the mask may be used as the gauging portion or the outside edge thereof may be made adjustable and used for gauging purposes.

To the accomplishment of the above and other objects, reference may be made to the attached drawings, in which:—

Fig. 1 is a perspective of the gauge and die;

Fig. 2 is a plan of the gauge;

Fig. 3 is an edge view thereof;

Fig. 4 is an exploded view of the gauge structure;

Fig. 5 is a view of a slightly modified form of gauge; and

Fig. 6 is a view showing use of the die unit in a cutout machine.

In the present embodiment the gauge takes the form of a mask adapted to rest on top of the work, and in addition to providing means for aligning or positioning the work relative to the die may function as a clamp or holddown.

Referring more particularly to the drawings, in which like reference numerals designate like parts, it will be observed that the die 10 comprises a base 10*a*, an ornamenting die member 10*b*, and has hinged thereto at 11 a mask or plate 12 hereinafter designated as the lower plate, this plate being provided with an opening 13.

Mounted on the plate 12 in substantial alignment therewith is a second plate 14, which may be called an upper plate, said plate 14 having pin and slot connections with plate 12 at 15 and 16. A lever 17 is pivoted at 18 to the plate 12, and pivoted at 19 to the plate 14. Obviously, movement of the lever 17 will cause a straight line movement of the plate 14 with respect to plate 12.

The plate 14 will have a cutout portion 20 corresponding to the opening 13 and the general contour of the complete opening 13—20 through both plates will correspond to the general contour of the marking or cutting elements of the die.

Selected edge portions of the opening 20 will function as the aligning or gauging means, the edges 21 in the present instance being utilized, although, as a variation, other portions of the mask, as the outer edges, may be used.

A plate 24 may be mounted resiliently on the die 10 to function as a work support, and also as a stripper, if the die is a cutting or perforating die, as illustrated.

The lower plate is calibrated as indicated at 25 for a run of sizes and additional calibrations may be used for other sizes or for various widths.

A stop 26 may be placed on the plate 12 to limit movement of the arm 17.

Having thus described my structure, the use and operation thereof will be readily apparent. A piece of work, such as a shoe upper designed for use in the make up of a shoe of known size, for example, size 4, is placed on the support 24, the gauge having been adjusted by means of the lever 17 to such size. The gauge or mask is then brought down upon the work and the work adjusted to bring the permanent marking thereon into coincidence with the gauging edge 21 after which, ornamentation of the work may be effected.

It is assumed that the die engaging arrangement above described will be used in a machine of the general type illustrated in my patents and applications above referred to and in Fig. 6 there is illustrated a portion of the machine shown in one of said patents. In use, the entire die and work support will be removed from under the plunger 30 and the work adjusted as just described. Then the die with the work properly aligned relative to the cutting members will be returned to a position beneath the plunger, and the operator, by effecting a downward movement of the plunger, will cause a perforating or cutting out of the work.

In the machine of Fig. 6, the die unit is power actuated, that is the operator by stepping on a treadle 31 causes an outward movement of the die through the medium of link 32 and by stepping on another treadle (not shown connected to link 32) effects a return movement thereof. The movement of the plunger is effected through mechanism under control of the treadle 33. Obviously, any suitable arrangement of treadles and connections as illustrated in the aforesaid patents may be utilized.

When a diferent run is to be ornamented, the operator, knowing the size or grade of parts will simply adjust the relative position of the plates 12 and 14 in accordance with the calibrations 25.

One of the characteristics of the mask is that it is raised and lowered with the work usually beneath it.

It should be noted that the gauge mask as described above has but a single movement in a straight line. The mask however, might be given two or more movements by splitting it into two or more different parts and having the slots set at angles, or the slots shaped so as to give whatever movement is desired to the gauging edge or portion that is to be used. One example of such a modification is illustrated in Fig. 5 wherein the plate having a gauging edge is split into sections 14*a*, 14*b* and 14*c*. The means of adjusting these sections is illustrated as wing nuts and bolts 27, but obviously any equivalent means may be utilized such as variation of the pivoted adjusting means 17 shown in Fig. 2. Of course this gauge is intended to be calibrated in a manner similar to the preferred form, the showing of Fig. 5 being merely illustrative of the multiple movement idea.

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

1. The combination with an ornamenting die, of a gauge plate for aligning work relative to said die, said plate being positioned to overlie the work and having an adjustable portion shaped to conform to a predetermined characteristic of the work whereby the work may be aligned relative to the die.

2. The combination with an ornamenting die, of a gauge plate for aligning work relative to said die, said plate being mounted on said die for movement from an inoperative position to a position overlying the work and having an adjustable gauging portion shaped to conform to a predetermined characteristic of the work.

3. The combination with an ornamenting die of a gauging plate for aligning work relative to said die, said plate being adjustably mounted on said die and arranged to overlie the work, and having a gauging portion

shaped to conform to a predetermined characteristic of the work whereby the work may be aligned relative to the die.

4. The combination with an ornamenting die, of a support arranged to receive a fitted upper, a mask for aligning the fitted upper relative to said die, said mask having a gauge portion shaped to conform to a known characteristic of the upper whereby said upper may be properly positioned on the support, relative to said die, said gauge portion being adjustable to known grades of work.

5. The combination with an ornamenting die, of a gauge plate for aligning work relative to said die, said plate being positioned to overlie the work and having an adjustable portion shaped to conform to a predetermined characteristic of the work, whereby the work may be aligned relative to the die, and means to predetermine the position of said adjustable portion.

6. The combination with an ornamenting die, of a gauge for aligning work relative to said die, said gauge comprising a laminated mask arranged to overlie the work, one of said laminations being slidable on the other, means for sliding said lamination to a predetermined position, and means on said laminations shaped to conform to a predetermined characteristic of the work whereby the work may be aligned relative to the die.

7. The combination with an ornamenting die of a gauge for aligning work relative to said die, said gauge comprising a laminated mask positioned to overlie the work, one of said laminations being adjustable relative to the other, means for adjusting said lamination, and means for predetermining the adjusted position of said adjustable lamination.

8. The combination with an ornamenting die of a gauge for aligning work relative to said die, said gauge comprising a laminated mask positioned to overlie the work, one of said laminations being adjustable relative to the other, and means for moving said lamination in a straight line relative to the other lamination, thereby to effect an adjustment.

9. The combination with an ornamenting die of a gauge for aligning work relative to said die, said gauge comprising a laminated mask positioned to overlie the work, one of said laminations being adjustable relative to the other, and means for moving portions of said lamination in a plurality of directions relative to the other lamination, thereby to effect an adjustment.

10. A gauge for use in aligning work relative to an ornamenting die comprising a pair of plates connected to each other, means mounting said plates on said die in position to overlie the work, means to move one of said plates relative to the other, said movable plate having a gauging portion shaped to conform to a predetermined characteristic of the work whereby the work may be aligned relative to the die.

11. A gauge for use in aligning work relative to an ornamenting die comprising a pair of plates connected to each other, means mounting said plates on said die in position to overlie the work, means to move one of said plates relative to the other, said movable plate having a gauging portion shaped to conform to a predetermined characteristic of the work whereby the work may be aligned relative to the die, the other of said plates having calibrations thereon, cooperative with said moving means, whereby the degree of movement of said first plate may be predetermined.

12. A gauge for use in aligning work relative to an ornamenting die comprising a pair of superposed plates connected to each other, said plates having substantially coincident cutouts, means to move one of said plates relative to the other, said movable plate having an edge of its cutout shaped to form a gauging portion cooperative with markings on the work whereby the work may be aligned relative to the die.

13. A gauge for use in aligning work relative to an ornamenting die comprising a pair of superposed plates connected to each other, said plates having substantially coincident cutouts, means to move one of said plates relative to the other, said movable plate having an edge of its cutout shaped to form a gauging portion cooperative with markings on the work, whereby the work may be aligned relative to the die, the other of said plates having calibrations thereon whereby the degree of movement of said first plate may be predetermined.

14. A gauge mask for use in ornamenting machines, comprising a plate adapted for placement on the work, and having an opening therethrough, a second plate substantially coincident with said first plate and having an opening similar to the opening of said first plate, pin and slot connections between said plates, a lever pivoted on one of said plates and pivotally connected to the other of said plates effective to produce relative movement between the plates, one of said plates having a gauging portion cooperative with the work whereby the work may be properly adjusted in the machine.

15. A gauge for use in ornamenting machines, comprising a plate adapted for placement on the work and having an opening therethrough, a second plate substantially coincident with said first plate and having an opening similar to the opening of said first plate, pin and slot connections between said plates, a lever pivoted on one of said plates and pivotally connected to the other of said plates effective to produce relative movement between the plates, one of said plates having a gauging portion cooperative with the work

whereby the work may be properly adjusted in the machine, the other of said plates having calibrations cooperative with said lever whereby relative movement of the plates may be predetermined.

16. An ornamenting die unit comprising a base, an ornamenting die supported thereby and a gauge member connected to said base for swinging and sliding movement relative to said die, said gauge member comprising a plate located to overlie the work, and having an edge portion shaped to conform to a predetermined characteristic of the work and being thereby effective to indicate proper position of the work relative to the die, and means to adjust the location of said portion relative to the die.

17. An ornamenting die unit comprising a base, a die mounted thereon, a stripper mounted thereon in alignment with said die, and a gauge mask hingedly mounted thereon for movement toward and from said stripper, said gauge mask comprising a pair of plates connected for relative movement to each other and having substantially coincident openings therethrough, one of said plates having a portion cooperative with the work whereby the work may be aligned relative to said die, and means for variably adjusting the position of said portion relative to said die.

18. An ornamenting die unit comprising a base, an ornamenting die supported thereby and a gauge member connected to said base for movement relative to said die, said gauge member comprising a mask adapted to rest upon the work, and having a cutout of the general contour of the die, one of the edges of said cutout being effective to indicate proper position of the work relative to the die, and means to variably adjust the position of said edge.

19. A die comprising an ornamenting member and a work support arranged to receive a fitted upper and having clearance spaces for the accommodation of portions of the upper draped thereabout, means to align the work relative to said ornamenting member comprising a plate mounted for movement relative to said die, into a position overlying the work and having a portion shaped to conform to a predetermined characteristic of the work whereby proper adjustment of the work relative to the die may be effected, and means to adjust the location of said portion relative to the main body of the plate.

20. A shoe ornamenting machine comprising ornamenting instrumentalities arranged to operate upon filtered uppers, and a gauge plate for aligning such uppers relative to said instrumentalities, said plate being positioned to overlie an upper and adjustable relative to said instrumentalities and having a portion shaped to conform to a predetermined characteristic of the upper whereby the upper may be aligned relative to said instrumentalities, and means to produce relative movement between said instrumentalities and the work thereby to effect an ornamentation of the upper.

In testimony whereof I affix my signature.

BENJAMIN W. FREEMAN.