May 8, 1934. B. W. FREEMAN 1,957,769

SHOE ORNAMENTING MACHINE

Filed Aug. 7, 1929 4 Sheets-Sheet 1

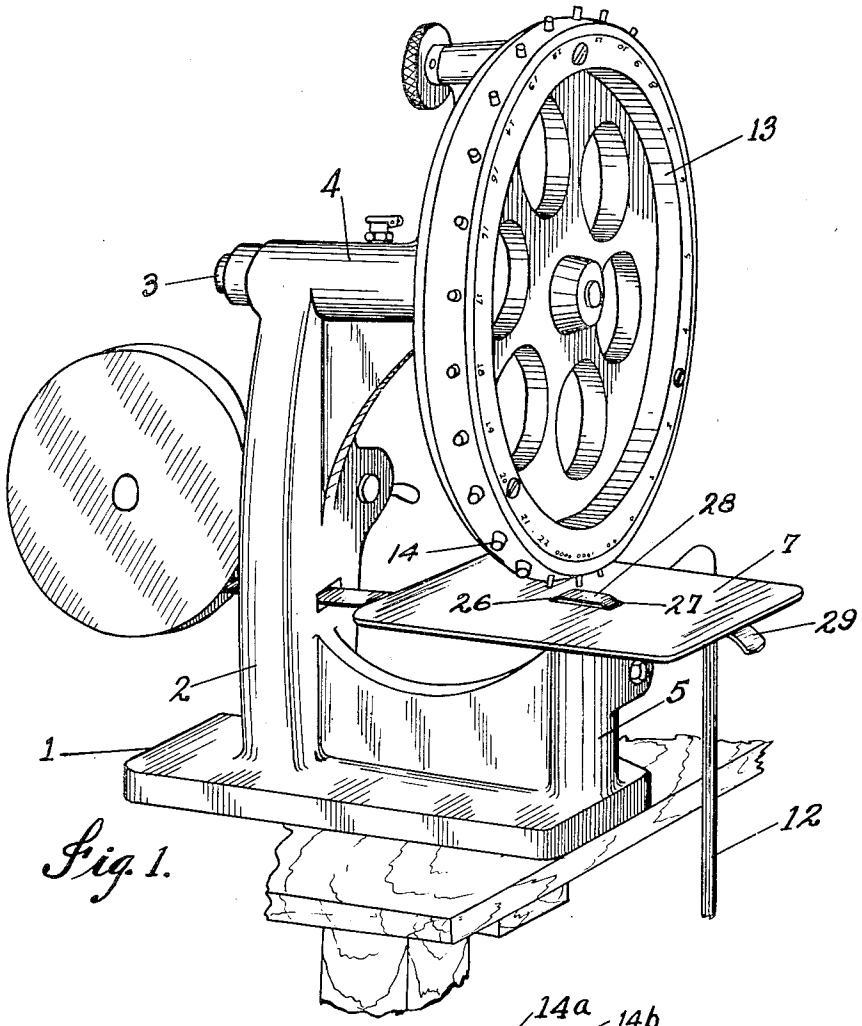


Fig. 1.

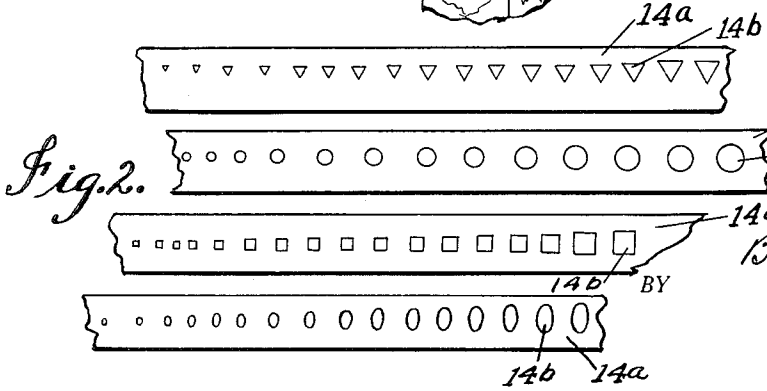


Fig. 2.

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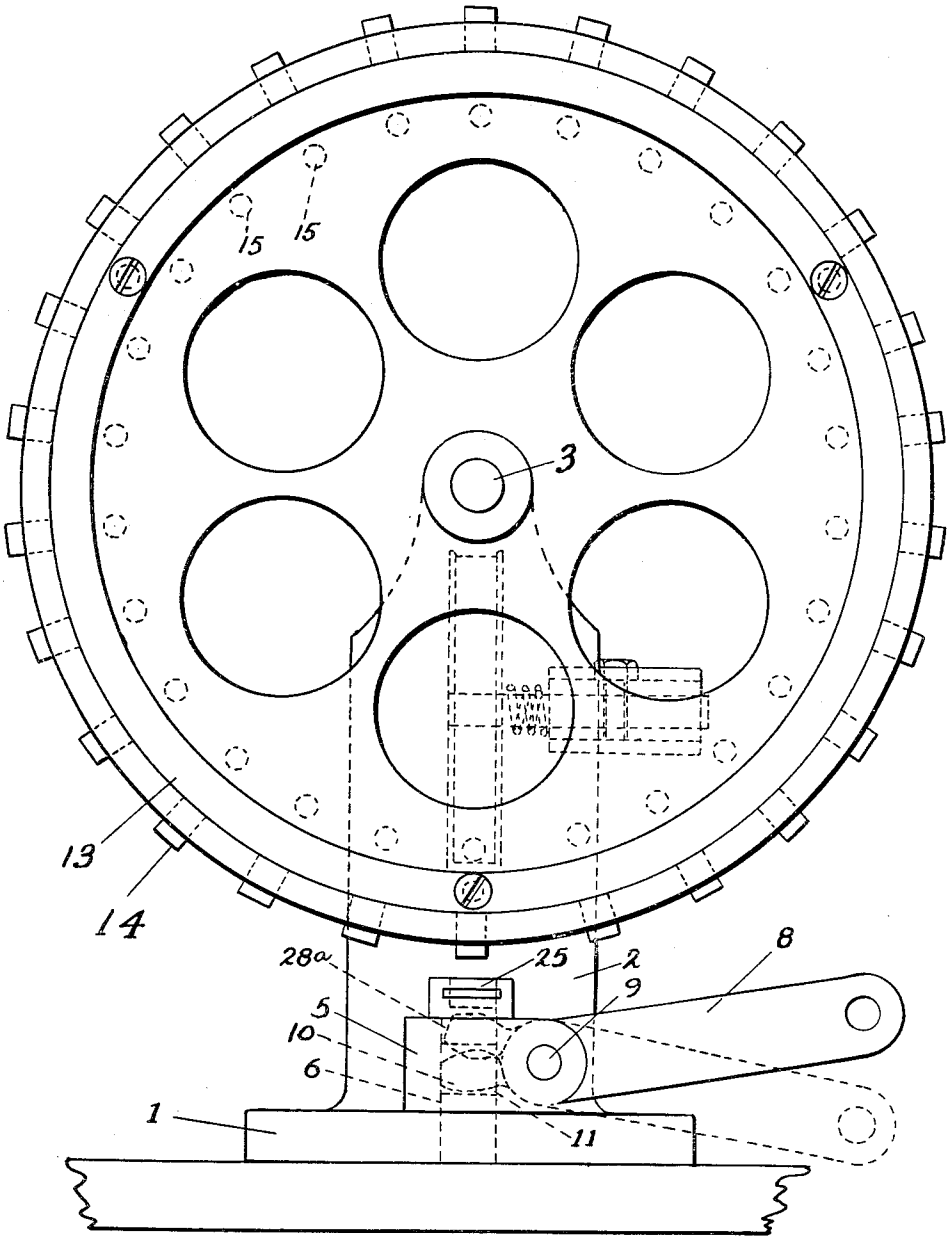


Fig. 3.

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SHOE ORNAMENTING MACHINE

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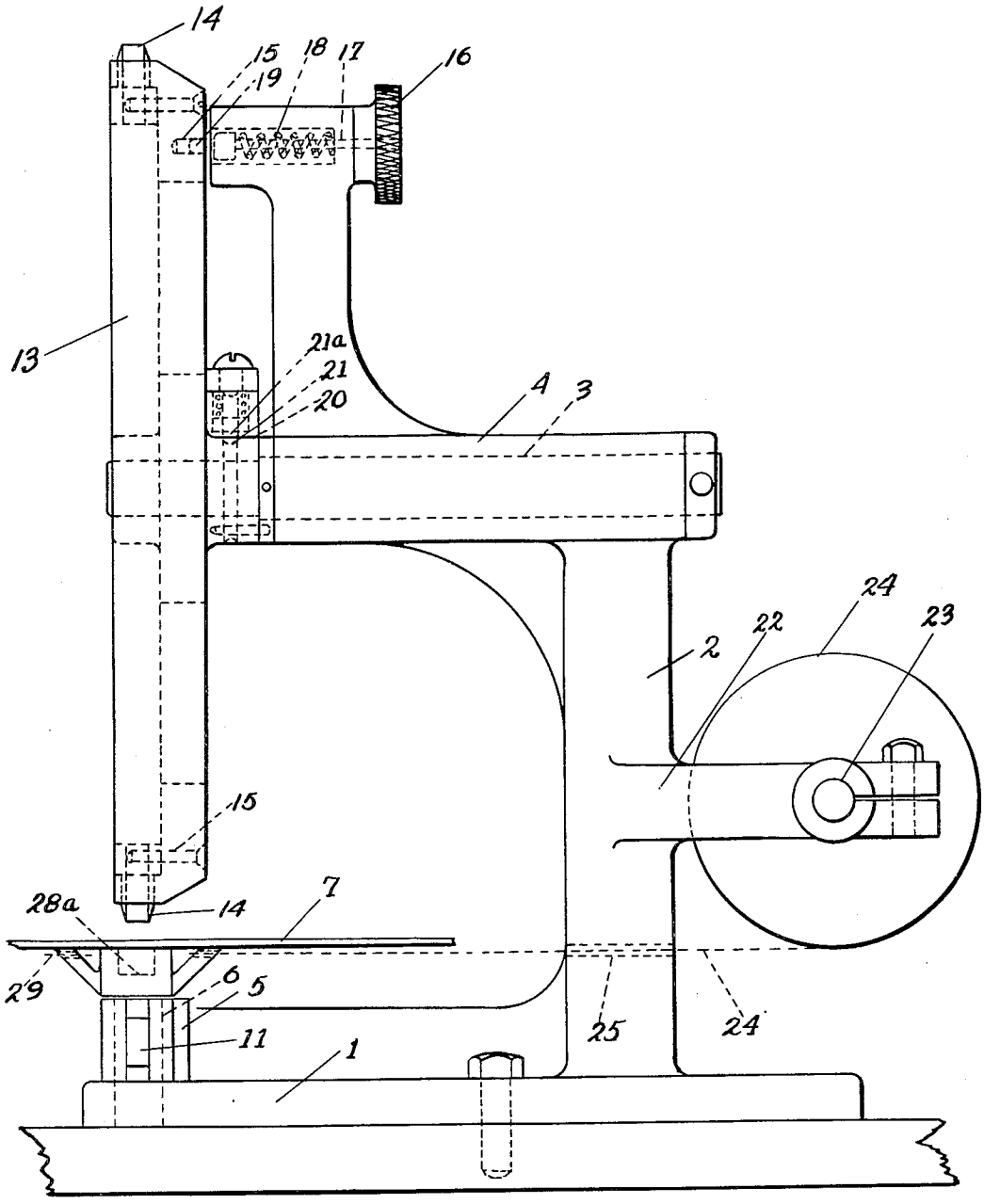


Fig. 4.

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SHOE ORNAMENTING MACHINE

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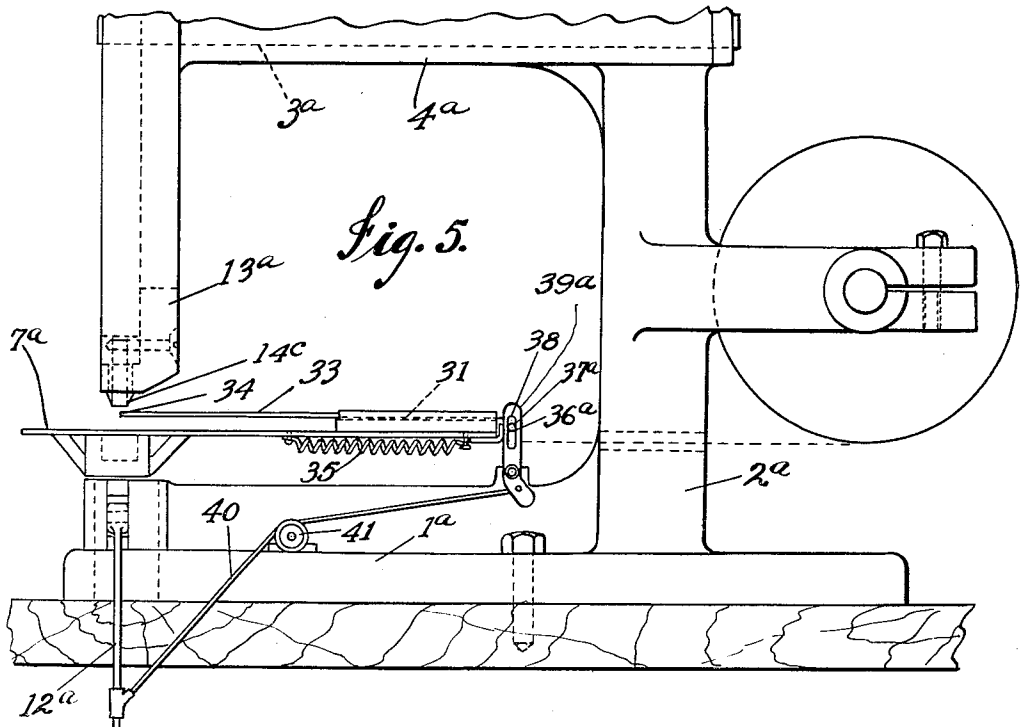


Fig. 5.

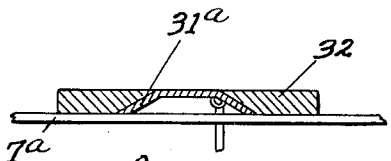


Fig. 6.

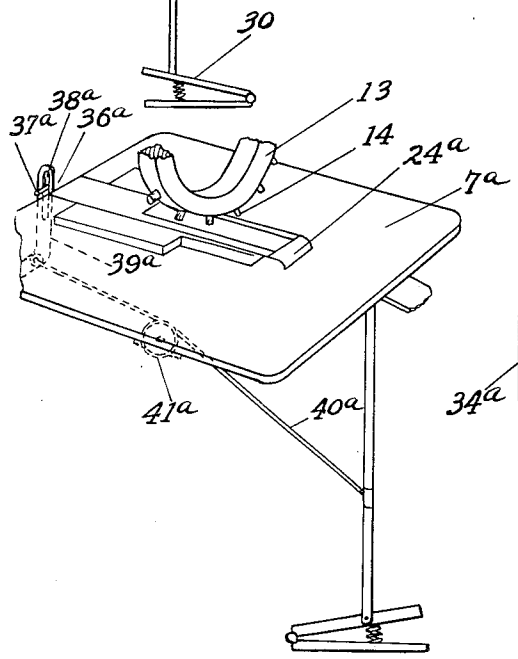


Fig. 7.

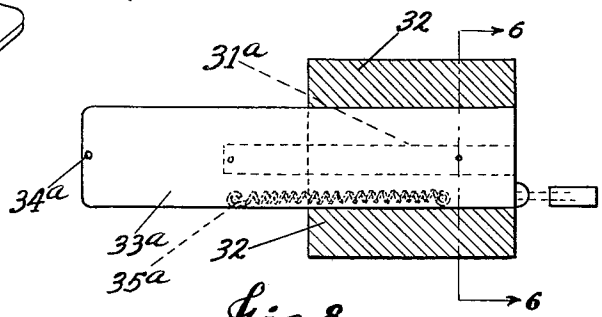


Fig. 8.

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Patented May 8, 1934 1,957,769

UNITED STATES PATENT OFFICE

1,957,769

SHOE ORNAMENTING MACHINE

Benjamin W. Freeman, Cincinnati, Ohio

Application August 7, 1929, Serial No. 384,151

5 Claims. (Cl. 164—86)

My invention relates particularly to pattern making machines for making patterns for ornamenting shoes.

In the past it has been the custom in designing patterns for shoes to lay the work on which the pattern is to be made on a support and to cut it out by hand. This is ordinarily done by selecting the preferred size and shape of punch with which it is desired to ornament the work, and, holding the punch in one hand, striking the end of the punch with a mallet or hammer, thereby causing the punch die to perforate the work in the desired position. As the patterns for the many different styles of shoes require the use of punches of various sizes and shapes, the pattern maker often has a very tedious job. Further, he has to take great care in properly aligning the punches so that the cut-out portions or perforations will be positioned in the desired position on the pattern. Even though great care is used in observing each punch used, an entire pattern may be ruined by the use of the wrong sized or shaped punch, or by improper alignment.

It is broadly the object of my invention to provide a pattern machine which will greatly aid in the making of patterns, both from the point of view of the labor involved and in the accuracy with which the work may be done. This I accomplish by mounting a series of dies of different size and shape on a movable member, such as a wheel, and by the further provision of a work supporting table operable preferably by foot power. Thus, the pattern maker may use both his hands or at least one of them for positioning or holding the work. The wheel is turned to the proper operating position for the particular die to be used, and by a simple pressing down on the treadle, the work is carried into engagement with the die.

It is further my object to provide a simple gauging device which will be automatic in its operation and which will assist in the accurate positioning of the work.

While the particular type of machine illustrated and described is primarily adapted for work in pattern making, it will also serve a particularly useful purpose in cutting designs in shoe upper material.

The above and other specific objects to which further reference will be made in the ensuing disclosure I accomplish by that certain combination and arrangement of parts of which I have shown a preferred embodiment.

Referring to the drawings:—

Figure 1 is a perspective view of a preferred type of machine.

Figure 2 is a plan view of several pattern strips showing typical varieties of perforations which may be made with the machine.

Figure 3 is a side elevation of the machine shown in Figure 1.

Figure 4 is a front elevation of the machine shown in Figure 1, with the work table and table actuating mechanism removed.

Figure 5 is a side elevation of a modified type of machine with parts in section.

Figure 6 is a sectional view of the gauge plate shown in Figure 5 taken along the lines 6—6 in Figure 8.

Figure 7 is a perspective view of the work support and gauging plate showing a treadle mechanism for elevating the work support and withdrawing the gauge plate at the same time.

Figure 8 is a plan view of the gauge plate.

From the base 1 of the machine frame which I have mounted on a table, an upright portion 2 extends up at the back and has a spindle 3 journaled in a long boss 4 extending substantially horizontal with, and at a suitably spaced distance from the base. In front, an upright portion 5 journals a vertically slidable spindle 6, which carries the work table 7. The work table, as shown, is adapted for flat work, but different shaped tables or work supports may be employed for different kinds of work. The table may, for example be shaped with clearance at the sides to allow fitted uppers to be draped thereabout. For elevating the work table I have provided a simple treadle actuating mechanism. A lever 8 pivoted at 9 has an end 10 which engages an aperture 11 in the spindle 6. A link 12 indicated in Figure 1 is secured to the long end of the lever 8 and a treadle 30 may be used to actuate the link 12. In some cases the lever 8 may have a handle at its long end by which the table may be actuated, it being understood that downward pressure on the long end of the lever elevates the table and vice versa.

Detachably mounted on the spindle 3 I have shown the die carrying wheel 13 in the periphery of which are mounted ornamenting dies 14 of different sizes and shape. A typical example of the variation in sizes and shapes of cutters are illustrated in the pattern strips 14*a*, having perforations 14*b* therein made by different sized and shaped dies. On the outer face of the wheel the several different types of dies are indicated so that the pattern maker can quickly identify the particular die which he wishes to use. In the rear face of the wheel there are a series of apertures 15 and a thumb nut 16 mounted on a pin 17 pressed by a spring 18, may be used to cause the engagement of the end 19 of the pin 17 in the apertures 15, it being understood that each aperture 15 locates one particular die or cutter on the opposite periphery of the wheel in operating position.

The hub 20 of the wheel 13 has a peripheral groove 21 in which a spring pressed pin 21*a* is adapted to seat, thereby retaining the hub on the spindle. It also provides a mounting which

will allow the operator to quickly remove the wheel and replace it with another wheel in case all the dies which he desires to use in making the pattern cannot be carried on one wheel.

In back of the upright 2 there is a boss 22 which mounts the spindle 23 of a web 24 of backing. The backing is fed through a slot 25 in the upright and then up through a slot 26 in the plate and down through a slot 27 so that area 28 of backing (over a soft metal or fiber plate 28*a*) is exposed as backing for the cutting dies. The apertures 15 are so arranged that when locked by the pin 17 one of the ornamenting dies will be in direct vertical registry over the area 28 of exposed backing. The backing may be advanced as required by pulling on the end 29 of the backing which extends out under the work supporting plate.

As there are so many mechanical equivalents which might be substituted from the prior art of shoe machinery for the specific mechanical construction which I have illustrated, I have attempted to show only enough to enable one skilled in the art to practice the invention subject to such mechanical equivalent substitutions as he may find desirable.

In Figures 5–8 I have shown a slightly modified type of machine in which I have incorporated a gauging device for assisting in the positioning of work relative to the position in which the work is to be engaged by the ornamenting die. The machine has a base 1*a*, upright frame 2*a* and a spindle 3*a* journaled in a boss 4*a*. The die carrying wheel 13*a* is mounted on the spindle 3*a* and the ornamenting dies 14*c* are arranged on the wheel in a desired arrangement.

I have further a work table 7*a* through slots in which a paper web 24*a* may be moved to provide a desired backing for the ornamenting dies. A link 12*a* is provided which may be actuated by a treadle 30 to cause the work table to be elevated to carry the work into engagement with the desired die.

As one simple means of assisting in the positioning of the work, I have provided a plate 31*a* which is slidable in guides 32*a*. Extending from the front of the plate 31 there is a preferably transparent plate 33*a* having one or more spots or other indicia 34*a* which will indicate the exact position for the work.

In order to position the work it is placed on the work support and adjusted so that the spot desired to be marked lies directly under the spot on the gauge plate. When the treadle 30 is depressed the gauge plate 33*a* is moved back clear of the work which will usually be held with the hands at the sides of the work support. The plate 31*a* is normally held in its forward position with the gauging mark in registry directly under the ornamenting die. This may be accomplished as with a spring 35*a*.

At one side of the back of the plate 31*a* there is a boss 36*a* from which a pin 37*a* extends. The pin is retained within the slot 38*a* of a bell crank arm 39*a*. The opposite end of the bell crank arm is connected with a cable 40*a* which passes over a pulley 41*a* and is connected by the link 12*a* to the treadle so that when the treadle is depressed the link 40*a* is pulled downwardly rocking the bell crank and causing the pin 37*a* carrying the plate 31*a* to be moved back. The gauge plate is thus moved to the rear clear of the work. With the spring construction described, however, the gauge will be moved back as soon as the treadle is released.

I have only shown a simple form of treadle operation in which the parts are shown diagrammatically, it being my object to explain the principle involved which will enable others to provide suitable mechanism which will perform the function of automatically moving the gauge plate back clear of the work during the ornamenting operation.

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

1. A shoe ornamenting machine having a work support with clearance at the sides to enable an operator to hold work at the sides of said support, backing material superposed on said support, a rotatable head having a series of die units mounted thereon, said head rotatable so as to bring a desired die to operative position, a gauge member mounted independently on said support, and a treadle operatively connected to said gauge for moving said gauge away from superposed relation to work held on said support and said treadle having means for moving said support relative to said die to cause said die to pierce work held on said support.

2. In a pattern making machine for making patterns for shoes, a frame, a support for work, a turret rotatable on a fixed horizontal axis on said frame having different sized dies arranged in series in the periphery thereof, means for moving said support on said frame toward the periphery of said turret, and an element movable on said frame to engage with and disengage from said turret for temporarily setting said turret to permit the selective perforation of the work by a particular sized die.

3. In a pattern making machine for making patterns for shoes, a support for work, a turret rotatable on a horizontal axis having different sized dies arranged in series in the periphery thereof, treadle means independent of said turret and connected to said support for moving said support toward the periphery of said turret, and resilient means for temporarily setting said wheel to permit the selective perforation of the work by a particular sized die.

4. In a pattern making machine for making patterns for shoes, a support for work, a turret rotatable on a horizontal axis having different sized dies arranged in series in the periphery thereof, treadle means independent of said turret and connected to said support for moving said support toward the periphery of said turret, and resilient means for temporarily setting said wheel to permit the selective perforation of the work by a particular sized die, said support having clearance at its sides to permit holding of work with both hands during the period when the operator actuates the treadle means.

5. In a pattern making machine for making patterns for shoes, a support for work, a turret rotatable on a horizontal axis having different sized dies arranged in series in the periphery thereof, means independent of said turret for moving said support toward the periphery of said turret, and resilient means for temporarily setting said wheel to permit the selective perforation of the work by a particular sized die, said support being provided with a web of backing and having means for advancing the backing to provide a new cutting surface, said resilient means constructed and arranged to temporarily set said turret with a die in registry with said backing.

BENJAMIN W. FREEMAN.