Jan. 25, 1938. A. W. ALTVATER 2,106,312

ORNAMENTING DEVICE

Filed Feb. 1, 1936 2 Sheets-Sheet 1

Fig. 1.

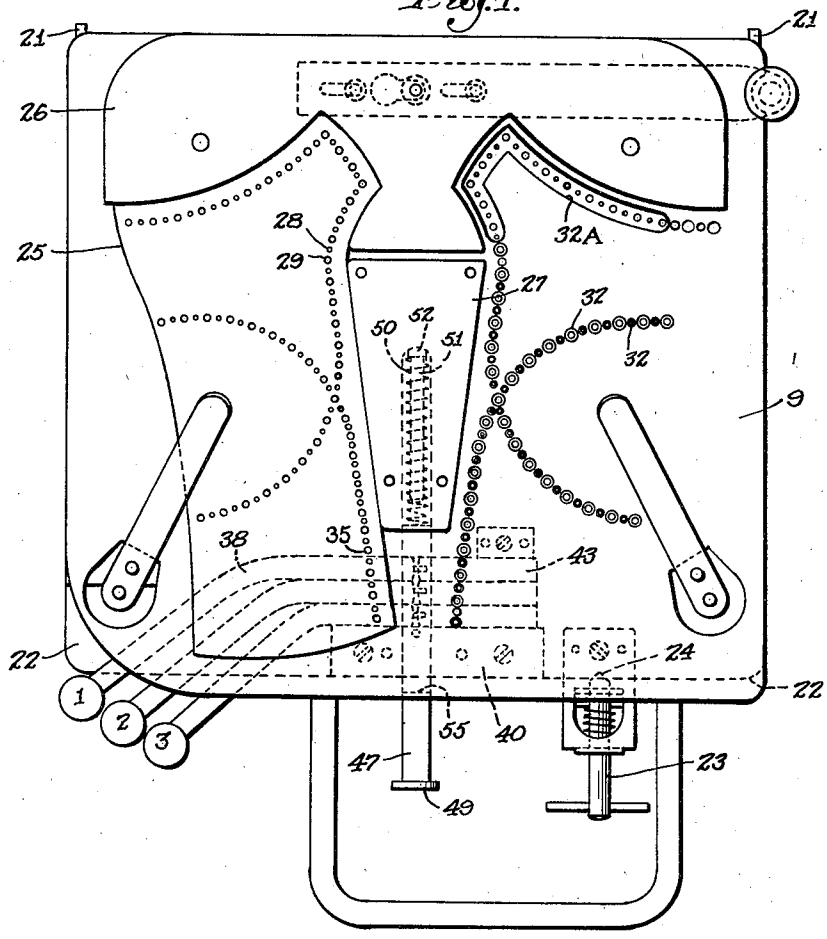


Fig. 2.

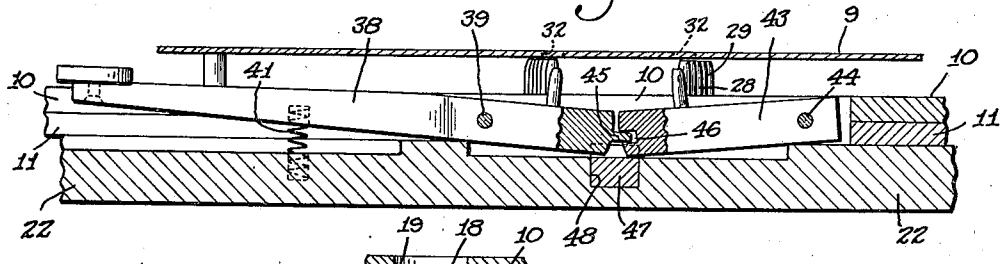


Fig. 3.

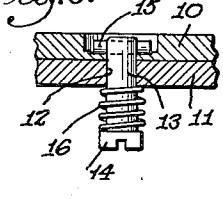
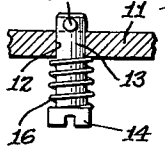


Fig. 4.



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Fig. 5.

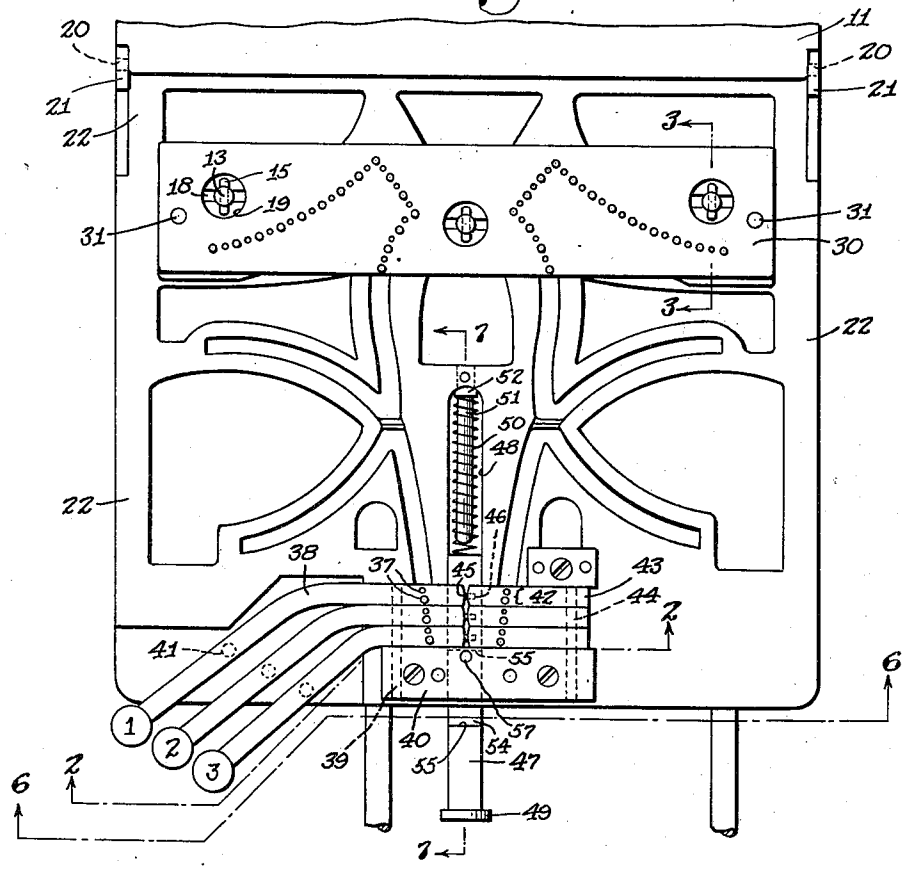


Fig. 6.

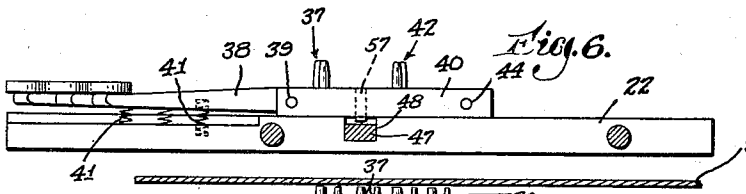


Fig. 7.

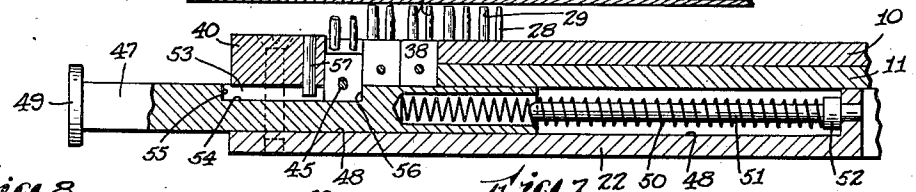
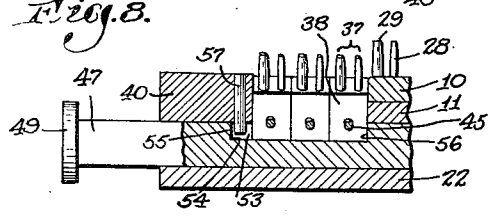


Fig. 8.



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UNITED STATES PATENT OFFICE

2,106,312

ORNAMENTING DEVICE

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Application February 1, 1936, Serial No. 61,942

29 Claims. (Cl. 164—93)

The present invention relates to devices for ornamenting shoe upper parts. For purposes of disclosure only the various features of the present invention are illustrated and described as being embodied in a device in which the ornamenting means and the work are perforating tubes and quarters, respectively. It will be readily understood by those skilled in the art that the ornamenting means and the work may be any of the other ordinary ornamenting instrumentalities and shoe upper parts, respectively.

In the shoe industry ornamenting devices are used to ornament shoe upper parts in a series of the different sizes and the different widths of the same style. In some instances the parts in the series have a common portion of their peripheries held to the same grade and are called center graded. In other instances the parts in the series have no common portion in their peripheries and are called regular graded. In still other instances the parts in the series have a portion which is center graded and other portions which are regular graded. To ornament this last mentioned series it is customary to provide the device with a fixed group of ornamenting means to ornament each shoe upper part in the series in that portion thereof which is center graded and with a removable group of ornamenting means to ornament one, or in the case of a split grade a few, of the different sizes of shoe upper parts in the portions thereof which are regular graded. It is desirable also to supplement the fixed group of ornamenting means with auxiliary ornamenting means in order to extend the line of ornamentation formed by the fixed group from the smallest to the largest shoe upper part in the series. Heretofore the auxiliary ornamenting means has comprised a plurality of sets, the sets being inserted successively in the device singly to augment the line of ornamentation of the fixed group as the shoe uppers operated upon increase in size from the smallest to the largest in the series.

The principal object of the present invention is to produce a device for ornamenting shoe upper parts in which the auxiliary ornamenting means constitutes a permanent part of the device and which may be thrown into and out of operation at the will of the operative.

To the accomplishment of this object, and such others as may appear hereinafter, the various features of the present invention reside in certain devices, combinations and arrangements of parts hereinafter described and then set forth broadly and in detail in the appended claims.

The various features of the present invention will be understood readily from an inspection of the accompanying drawings illustrating the best form of the invention at present devised, in which,

Figure 1 is a view in plan;

Fig. 2 is a view in sectional elevation on the line 2—2, Fig. 5, but showing the operating keys in the position they assume before being depressed;

Fig. 3 is a detail view in sectional elevation showing the means for clamping the top and bottom plates together;

Fig. 4 is a detail exploded view of the parts shown in Fig. 3;

Fig. 5 is a view in plan of the die base and the parts supported therefrom;

Fig. 6 is a detail view in sectional elevation on the line 6—6, Fig. 5;

Fig. 7 is a detail view in sectional elevation on the line 7—7, Fig. 5, after operating keys Nos. 1 and 2 have been depressed, and

Fig. 8 is a detail view showing the auxiliary dies in the position they assume upon the elevation of all the operating keys.

In the illustrated embodiment the work to be operated upon is supported flat-wise upon a stripper plate 9 (Figs. 1 and 2). The stripper plate 9 is supported in the usual manner yieldingly from a unitary structure comprising a top or tube plate 10 and a bottom or tube rest plate 11. The top plate 10 and the bottom plate 11 are clamped together with their adjacent faces in contact. To this end the bottom plate 11 (Fig. 3) is provided with a plurality of openings 12 each of which receives loosely a post 13 having a slotted head 14 on one end and a cross-pin 15 on the other. Coiled about the post 13 and interposed between the bottom plate 11 and the head 14 is a spring 16. To assemble the top plate 10 and the bottom plate 11, the post 13 is turned into the position of Fig. 4. The top plate 10 is then engaged with the bottom plate 11, the cross-pin 15 extending through an opening 17 formed in the top plate 10. By pushing the post 13 upwardly and then rotating it from the position of Fig. 4 to that of Fig. 3 the pin 15 is engaged in a seat 18 formed in the bottom of a countersink 19 on the top plate 10.

The bottom plate 11 is provided with lateral lugs 20, (Fig. 5), which are received loosely in ears 21 secured to the opposite sides of a base 22, thus permitting the top plate, the bottom plate and the stripper plate to be swung backwardly to expose the base, (Fig. 5). The pivoted parts

are locked to the base in the position of Fig. 1 by a spring pressed pin 23 the point of which is engaged with an opening 24 formed in the front edge of the base 22.

To form the upper at the back of a shoe, two pieces of leather, called quarters, one for the left side and one for the right side, are superimposed, grain face to grain face, and secured by a line of through and through stitches inserted along the adjacent back edges of the quarters. The result of this securing of the quarters together is illustrated in Fig. 7 of the patent to Osgood, 1,646,212, October 17, 1927.

Referring to Fig. 1, a left quarter is shown at 25 supported flatwise upon the stripper plate 9. The wing of the quarter is engaged by a removable gage 26. The top edge of the quarter is engaged by a fixed gage 27. It will be understood by those skilled in the art that the gages 26 and 27 are designed to gage also a right quarter (not shown) supported flatwise upon the stripper plate.

As indicated in Fig. 1, the quarter 25 is ornamented through the use of the illustrated embodiment of the present invention with a series of pin perforations, a small pin perforation 28 alternating with a larger pin perforation 29. In a series of quarters of the same style varying in size there are certain portions which are center graded, that is, have a portion common to each quarter in the series, and certain other portions which are regular graded, that is, have no portion common to each quarter in the series. To ornament such a series of quarters heretofore it has been customary to provide a group of tubes or other forms of cutting dies, herein called center graded, which ornament each quarter in the series, and another group of tubes, herein called regular graded, which ornament only one quarter in the series. With such an arrangement the center graded group of tubes are fixed while the regular graded group of tubes are interchangeably mounted so that the appropriate group for each quarter in the series may be provided readily.

In the illustrated embodiment of the invention these two groups of tubes are supported with their cutting edges upstanding in the customary manner. That is, the tubes forming the center graded group are received in openings in the top plate 10, the bottoms of the tubes being engaged with the bottom plate 11. The tubes forming the regular graded group are mounted in a similar manner, but the top and bottom plates therefor constitute an insert 30 (Fig. 5), which insert may be readily removed and replaced by another insert having a differently arranged group of tubes. To this end the insert 30 is provided with two depending pins 31 the bottom ends of which are received, in the well-known manner, in openings formed in the skeletonized base 22. The top and bottom plates of the insert 30 are preferably removably secured together in a manner identical with that of so securing the plates 10 and 11.

As usual in this type of device, the stripper plate 9 is provided with a series of openings 32 and 32A through which the cutting edges of the tubes protrude when the presser member of the die press depresses the stripper plate into a predetermined plane in which the work is impaled upon the cutting edges of the tubes.

Referring to Fig. 1, the quarter 25 is a relatively large one in a series of the same style. It will be understood that with the smallest quarter in the same series, the last perforation 35 of the center graded group would be spaced from the back edge of the quarter to clear the line of the back seam. Theoretically, if the center graded group of tubes were extended indefinitely it would seem that the last perforation in each of the remaining quarters in the series would be properly spaced from the edge to clear the back seam line. Practically this desideratum may not be obtained. Actually, if the center graded group of tubes is extended in length to ornament the different sizes of quarters, including the relatively large quarter 25 shown in Fig. 1, throughout the series and is designed to perforate properly the smallest quarter in the series, one of the perforations is bound to come within the area adjacent the back edge reserved for the back seam.

To overcome this difficulty, I have limited the extent of the center graded group of tubes to perforate properly the smallest quarter in the series and have provided auxiliary sets of tubes, herein shown for convenience of disclosure as three in number, which are thrown out of operation when the smallest quarters in the series are being perforated, and which are thrown into operation successively when the next three succeeding sizes of quarters in the series are to be perforated.

The first set of auxiliary dies for the left quarter comprise a pair of upstanding tubes 37 (Fig. 5), one for forming a small pin perforation 28 and the other for forming a larger pin perforation 29, which set is carried by the short arm of a lever 38. The lever 38 is pivoted on a horizontal pin 39 projecting rearwardly from a block 40 secured to the base 22. The long arm of the lever 38 is provided with an operating key No. 1. The operating key No. 1 is maintained normally elevated by a coiled spring 41 the opposite ends of which are received in recesses formed in the base 22 and the long arm of the lever 38, respectively.

The first set of auxiliary dies for the right quarter comprise a pair of upstanding tubes 42 (Fig. 5), for forming the pin perforations 28 and 29, respectively, which set is carried by an arm 43 pivoted at one end on a horizontal pin 44 projecting rearwardly from the block 40. The first sets of auxiliary dies for the left and right quarters are connected to move into and out of operating position together by a pin 45 projecting from the free end of the short arm of the lever 38 into engagement with a slot 46 formed in the free end of the arm 43, the adjacent bottoms on the ends of the lever 38 and the arm 43 being slabbed off (Fig. 2) to permit their relative movement.

The second sets of auxiliary dies for the next succeeding larger size of left and right quarters are duplicates of the first sets of auxiliary dies and are mounted and controlled from operating key No. 2 in a manner identical therewith. The third sets of auxiliary dies are similarly mounted and are controlled from operating key No. 3.

The adjacent ends of the levers 38 and the arms 43 on all three sets of the auxiliary dies are rigidly supported during their perforating operation by the upper surface of a bar 47 mounted to slide in a way 48 formed in the base 22. The bar 47 on its front end is provided with an operating head 49 and its other end is chambered to receive one end of a spring 50 which is coiled about a rod 51 projecting forwardly from the rear wall of the way 48. The other end of the coiled spring 50 engages a collar 52 on the rod 51.

When the head 49 is engaged by the operative and the bar 47 is pushed rearwardly, power is stored in the spring 50 and the adjacent ends of

the levers 38 and arms 43 of the three sets of auxiliary dies are moved downwardly by the springs 41 into a pocket 53 formed in the bar 47. The bottom 54 of the pocket is a flat surface terminating at its opposite ends in vertical walls 55 and 56, respectively. The position of the parts when the bar 47 is pushed inwardly is illustrated in Fig. 8. As indicated, the bottoms of the levers 38 and the arms 43 engage the surface 54, the bar 47 being held from projection outwardly under the power of the coiled spring 50 by the back adjacent faces of the levers 38 and the arms 43 on the first set of auxiliary dies which are engaged by the wall 56 on the bar 47. The three sets of auxiliary dies are thus held in a depressed position such that when the presser member of the die press engages the stripper plate 9 and moves it down below the cutting plane of the fixed dies the cutting edges of the three sets of auxiliary dies are not projected through the openings therefor in the stripper plate. Stated in another way, the three sets of auxiliary dies are held out of operation.

When it is desired to perforate the next largest pair of quarters in the series of the same style, the operative depresses operating key No. 1 thereby removing the adjacent ends of the lever 38 and arm 43 of the first set of auxiliary dies from engagement with the wall 56 of the bar 47, thus permitting the compressed spring 50 to push the bar 47 forwardly until the wall 56 engages the depressed adjacent ends of the lever 38 and arm 43 of the second set of auxiliary dies. Thus, by depressing operating key No. 1 the operative has elevated the cutting edges of the first set of auxiliary dies into perforating position and has caused them to be rigidly supported in that position by the upper surface of the bar 47.

Depression of operating key No. 2 serves to elevate the second set of auxiliary dies into the position shown in Fig. 7. Depression of operating key No. 3 elevates the third set of auxiliary dies into perforating position in a similar manner. When the three sets of auxiliary dies have been elevated into perforating position the spring 50 causes the wall 56 to contact a pin 57 projecting into the pocket 53 from the block 40.

To return the auxiliary dies into their inoperative position illustrated in Fig. 8, the operative again pushes rearwardly upon the head 49 until the vertical wall 56 is re-engaged with the backs of the lever 38 and arm 43 controlled by operating key No. 1. The throwing of the auxiliary perforating tubes into and out of operating position takes place while the upper structure, comprising the stripper plate 9, top plate 10 and bottom plate 11, is locked to the lower structure, comprising the base 22.

Nothing herein explained is to be interpreted as limiting the invention in the scope of its application to use in connection with the particular apparatus or the particular mode of operation or both selected for purposes of illustration and explanation. While the particulars of construction herein set forth are well suited to one mechanical form of the invention, it is not limited to these details of construction, nor to the conjoint use of all its features, nor is it to be understood that these particulars are essential since they may be variously modified within the skill of the artisan without departing from the true scope of the actual invention, characterizing features of which are set forth in the following claims by the intentional use of generic terms and expressions inclusive of various modifications.

What is claimed as new, is:

1. In a shoe part ornamenting device, the combination with a center graded group of ornamenting means for ornamenting the smallest quarter in a series of quarters of the same style and a plurality of auxiliary ornamenting means for extending the line of ornamentation formed by the center graded group to ornament larger quarters in the series, of a plurality of keys, and mechanism for moving said auxiliary ornamenting means to a predetermined position depending upon the particular key which is actuated.

2. In a shoe part ornamenting device, the combination with a plurality of ornamenting means normally held in an inoperative position, of an operating key for determining the operative position of at least one of said ornamenting means relative to the others, and means for mounting the key so that it may be actuated.

3. In a shoe part ornamenting device, the combination with a plurality of ornamenting means, a plurality of controlling members, one for each ornamenting means, and a support for underlying the ornamenting means to support them in operative position, of power mechanism set in motion on the actuation of a selected controlling means for moving the support beneath the ornamenting means associated with the actuated controlling means.

4. In a shoe part ornamenting device, the combination with ornamenting means and a support therefor, auxiliary ornamenting means and a support therefor, and means for locking the supports together, of means operable while the supports are locked together to move the auxiliary means into and out of operative position.

5. In a shoe upper part ornamenting device, the combination with ornamenting means and a support for supporting some of the ornamenting means, of means for relatively moving the support and the ornamenting means supported thereby in two directions, respectively substantially normal to each other.

6. In a shoe upper part ornamenting device, the combination with ornamenting means, of a support having surfaces at two different levels upon each of which surfaces the ornamenting means may be supported, and means for transferring the ornamenting means from one level to the other.

7. In a shoe upper part ornamenting device, the combination with ornamenting means, of a movable support having surfaces at two different levels upon each of which surfaces the ornamenting means may be supported, and means for moving the support to transfer the ornamenting means from one level to the other.

8. In a shoe part ornamenting device, the combination with a plurality of ornamenting means normally held in an inoperative position, of an operative key for determining the operating position of some of the ornamenting means independently of the others, and means for mounting the key so that it may be actuated.

9. In a shoe part ornamenting device, the combination of a plurality of sets of ornamenting means normally held in an inoperative position, an operating key associated with each set of ornamenting means for determining the operating position of the sets of ornamenting means in a predetermined order, and means for returning the sets of ornamenting means to the inoperative position in a reverse order.

10. In a perforating device, the combination with perforating means and a stripper plate,

upon which the work is supported, movable into a plane in which the work is perforated by the perforating means, of means for retracting the perforating means to a position beneath the stripper plate and entirely below said plane.

11. In a shoe part perforating device, the combination with supporting means, a perforating element carried thereby, a stripper plate adapted to be positioned in a plane parallel to the cutting level of said element, an additional perforating element, and means for supporting said additional element on the supporting means in a position spaced below the cutting level of the first named element, of means for moving said additional element to the cutting level of the first named element while the parallelism between the stripper plate and said level remains unchanged.

12. In a shoe part perforating device, the combination with supporting means, a perforating element carried thereby, a stripper plate mounted for movement into and out of a position of operative association with said element, means for locking the stripper plate in said position, an additional perforating element, and means for supporting said additional element out of operative association with the stripper plate, of means for moving said additional element into operative association with said stripper plate while it is in locked position.

13. In a shoe part perforating device, the combination with supporting means, a perforating element carried thereby, a stripper plate hingedly connected with the supporting means for swinging movement into and out of a position of operative association with said element, means for locking the stripper plate in said position, an additional perforating element, and means for supporting said additional element out of operative association with the stripper plate, of means for moving said additional element into operative association with the stripper plate while it is in locked position.

14. A shoe part perforating device having, in combination, a support, a pair of arms mounted thereon for axial movement simultaneously from one position to a different position, a perforating element carried by each arm, respectively, each of said perforating elements being stationary relative to its arm, and means for maintaining the arms in either position.

15. In a shoe part perforating device, the combination with a support, a plurality of sets of arms mounted thereon for movement from one position to a different position, at least one arm of one set and at least one arm of another set being movable simultaneously, and a perforating element carried by each arm, respectively, and movable therewith, of means for maintaining both the moved and unmoved arms in their respective positions.

16. In a shoe part perforating device, the combination with a support, a pair of arms mounted thereon for movement from one position to a different position simultaneously, a perforating element carried by each arm, respectively, and movable therewith, and an abutment having a portion at one level for engaging the arms when they are in said one position and a portion at a different level for engaging the arms when they are in said different position, of means for maintaining the arms engaged with the abutment in either position.

17. In a shoe part perforating device, the combination with a support, a plurality of sets of arms mounted thereon for movement from one position to a different position, at least one arm of one set and at least one arm of another set being movable simultaneously, a perforating element carried by each arm, respectively, and movable therewith, and an abutment having a portion at one level for engaging arms which may be in said one position and a portion at a different level for engaging arms which may be in said different position, of means for maintaining the arms engaged with the abutment in either position.

18. A shoe part perforating device having, in combination, a support, a pair of arms, means for mounting the arms on the support for movement simultaneously and axially relatively to each other, and a perforating element carried by each arm, respectively, and movable therewith, said arms and perforating elements being removable as a unit from the support.

19. A shoe part perforating device having, in combination, a support, a plurality of sets of arms, means for mounting the arms on the support for movement, at least one arm of one set and at least one arm of another set being movable simultaneously and axially relatively to each other, and a perforating element carried by each arm, respectively, and movable therewith, said arm sets and perforating elements being removable as a unit from the support.

20. In a shoe part perforating device, the combination with a support, a die holder engageable therewith, a die, provided with a perforating element, mounted on the holder, and a perforating element carried on the support in a position removed from the cutting level of the first named element when the die holder is engaged with the support, of means for moving said second named element to the cutting level of the first named element while said holder and said support are engaged.

21. In a shoe part perforating device, the combination with a support, a die holder pivoted thereto for movement into and out of engagement with the support, a die, provided with a perforating element, mounted on the holder, and a perforating element carried on the support in a position removed from the cutting level of the first named element when the holder is engaged with the support, of means for moving said additional element to the cutting level of the first named element while said holder and said support are engaged.

22. A shoe part perforating device having, in combination, a support, a die holder pivoted thereto for movement into and out of engagement with the support, a die, provided with a perforating element, mounted on the holder, a stripper plate operatively associated with said element and movable with the holder, a perforating element carried on the support in an inoperative position when the holder is engaged with the support, and means for moving the second named element into a position of operative association with the stripper plate while said holder and support are engaged.

23. In a shoe part perforating device, the combination with a support, perforating elements carried thereby forming part of a perforation design for a work piece, a die holder provided with a die having perforating elements forming another part of the perforation design, said die holder and said support being relatively movable to cause the perforating elements

carried by each to lie at the same cutting level, and an additional perforating element carried on the support in a position removed from said cutting level, of means for moving said additional element to said cutting level to increase the number of elements thereat.

24. A shoe part ornamenting device having, in combination, a support, a pair of arms mounted thereon so that at least a portion of each arm is movable from one level to a different level simultaneously, a perforating element carried by each arm portion, respectively, and movable therewith, and means for maintaining the arm portions at either level.

25. In a shoe part ornamenting device, the combination with a support and two sets of ornamenting means, of means for removably maintaining each set mounted on the support, one of said sets being removable from the support while the other set is maintained supported.

26. In a shoe part ornamenting device, the combination with a support, of two sets of ornamenting means one of which is removably mounted on the support in operative position and the other of which is movable on the support from an inoperative position to an operative position, or vice versa, while continuously supported from the support.

27. In a shoe part ornamenting device, the combination of a plurality of ornamenting means at least one set of which is normally held in an operative position and some of the sets of which are normally held in an inoperative position, an operating key associated with each set of the normally inoperatively positioned ornamenting means for moving them, respectively, to an operative position in a predetermined order, and means for returning said sets of ornamenting means to their inoperative position in a reverse order.

28. In a perforating device, the combination with perforating means and a stripper plate movable into a plane in which the work is perforated by the perforating means, of means for retracting the perforating means to an inoperative position away from the stripper plate and entirely out of said plane.

29. In a shoe part ornamenting device, the combination with a plurality of ornamenting means, a plurality of controlling members, one for each ornamenting means, and a movable support adapted to support the ornamenting means in operative position, of power mechanism set in motion on the actuation of a selected controlling means for moving the support into supporting relationship with the ornamenting means associated with the actuated controlling means.

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