H. H. WHITCOMB.

VAMP LOCATING DEVICE.

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1,430,710.

Patented Oct. 3, 1922.

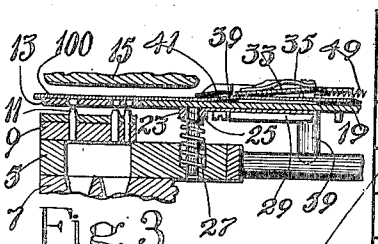
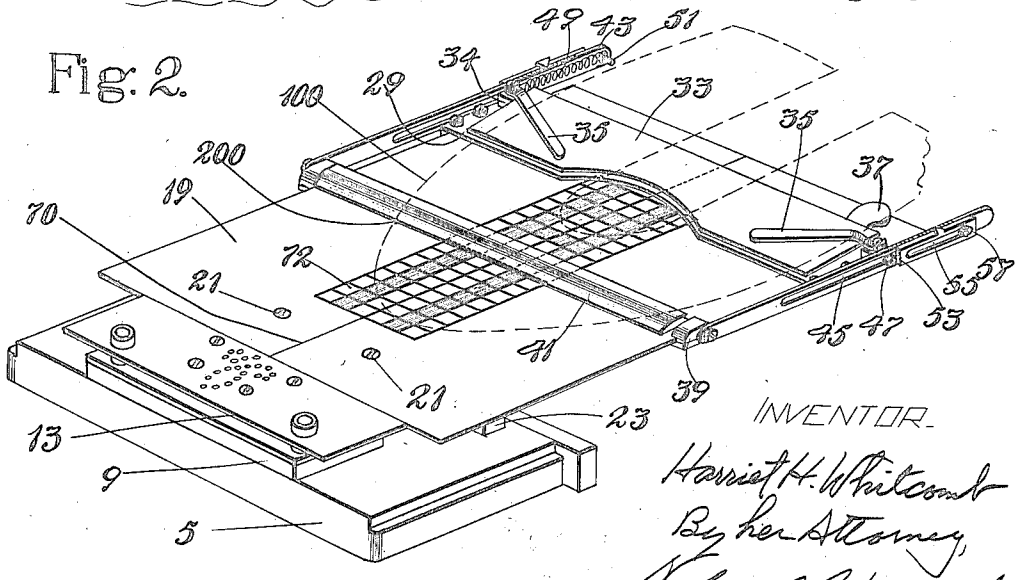


Fig. 3.

Fig. 1.

Fig. 2.



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By her Attorney,

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UNITED STATES PATENT OFFICE.

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VAMP-LOCATING DEVICE.

Application filed February 12, 1920. Serial No. 358,172.

To all whom it may concern:

Be it known that I, HARRIET H. WHITCOMB, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain Improvements in Vamp-Locating Devices, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to a device for facilitating the presentation of a piece of work in position to be operated upon and is herein illustrated as embodied in a device designed to facilitate the presentation of a vamp or a wing tip to the operating tool of a punching machine.

In the manufacture of boots and shoes, it is usual to ornament certain parts of the upper by punching designs therein by means of a gang punching machine. When it is desired so to use a pattern punch to ornament some of these parts, as the toe portion of a vamp or wing tip, difficulty is experienced in presenting the work to the machine in the proper symmetrical manner, especially since in machines commonly used for this work, it is impossible to see the part of the stock to be operated upon when it has been placed in position to be punched.

For purposes of illustration, the problem of properly presenting a vamp to receive an ornamental punched pattern in its toe portion will be considered, though it is to be understood, that the invention is in no way limited in its applicability to the punching of vamps.

The toe portions of vamps are not symmetrically cut on regular curves, and their outlines differ according as they are rights or lefts and according to their size. It frequently happens that there are used in a single factory vamps having several hundred different forms, the differences being due to differences in style as well as to the causes previously mentioned. This great variation makes difficult a successful use of edge gages. Moreover the longitudinal position of the pattern to be punched varies, being given as a distance from the center of the throat of the vamp, and this renders still less feasible the use of edge gages.

The throat of a vamp, however, whatever its size and shape, is symmetrical with respect to the longitudinal axis passing through its center and through that part of the toe portion which ordinarily is ornamented by punching, and the present invention contemplates the utilization of this symmetry of the throat symmetrically to place the punching on the toe portion.

An object of the present invention, accordingly, is to provide simple and accurate means for properly presenting the desired portions of vamps or other irregularly shaped pieces of stock to mechanism for operating upon them. In the illustrated embodiment of the invention, this is accomplished by the provision of a group of symmetrical figures, such as squares, symmetrically arranged with respect to the center line of a support on which the work may be positioned previously to its presentation to the operating means. When the arrangement of these figures visible through the throat of the vamp is symmetrical, the center line of the vamp will coincide with, or will be superimposed upon, the center line of the support, and when the vamp is moved forward in the direction of this center line a predetermined distance, the vamp will be in the correct position to be operated upon.

Further features of the invention lie in the making of these symmetrically arranged symmetrical figures of a plurality of visually distinct groups, as by using a plurality of contrasting colors, the exemplified embodiment of the invention having squares of two colors, and in the use of heavy lines of demarkation between the different figures. It has been found that the use of these contrasting colors and heavy lines is of material assistance in rapidly positioning the work.

In another aspect the invention contemplates the combination with a work support marked in the above manner, of means for moving the work a predetermined distance after it has been correctly positioned upon the work support, to present it in the desired relation to the operating means.

In speaking of the stock to be operated upon, the term "vamp" has been repeatedly used throughout the specification and claims. This has been done for the sake of convenience and brevity, and that term is not intended to be understood in a limiting man-

ner, but to include, as well as vamps in a literal sense, wing tips and other blanks or articles capable of being handled in this way.

The foregoing and other features of the invention, including certain details of construction and combinations of parts, will be described as embodied in an illustrative machine and pointed out in the appended claims.

In the drawings,

Fig. 1 illustrates diagrammatically the arrangement of the squares of the centering device of this invention;

Fig. 2 is a perspective view of a vamp gage in which the centering device is embodied; and

Fig. 3 is a cross-sectional view showing the relation of the vamp and gage, when in perforating position, to the punches and anvil of a perforating machine with which the invention may be used.

The centering device of the present invention is adapted for use in connection with a perforating machine and gage such as that shown in the application of Harry R Stanbon, Serial No. 298,048, filed May 19, 1919, for a vamp gage for punching machines. For purposes of illustration it is shown as so embodied though of course it is in no way limited in its utility to such a machine. This machine comprises a punch plate holder 5 which rests upon a suitably constructed portion of the frame 7, a punch plate 9 which is carried by the punch plate holder, a series of punches 11 arranged in a pattern, for instance as shown in Fig. 2, a yieldingly sustained stripper plate 13 provided with holes through which the punches may be forced, and a reciprocable punch block or plunger 15. The punch block may be driven in any suitable manner as by a one-revolution clutch which causes the shaft to make one revolution and then come to rest with the punches, punch block and stripper plate in the relation of Fig. 3, to permit withdrawal of the punched blank and presentation of a succeeding one. It will be understood that if a portion of a blank is placed on the stripper plate 13 over the punches and the clutch thrown in, the blank will be punched.

Abutting at its forward end against the stripper plate 13 and yieldingly held at the same level as the stripper plate is a work support 19 in the form of a plate of sheet metal. This supporting plate may, if desired, be integral with the stripper plate since the two plates always preserve the same relation to each other and are moved up and down together. In the illustrated machine the supporting plate 19 is fastened by screws 21 to a bar 23 which is fast to the upper ends of a plurality of pins 25 vertically slidable in sockets in the punch plate holder. Springs 27 encircle the pins and are of sufficient strength to sustain the parts in the position shown in Fig. 3, it being understood that when the punch block 15 is moved downwardly the stripper plate 13 and supporting plate 19 are forced downwardly in unison and that when the punch block rises the plates rise into the position shown. Slidably mounted on the support 19 is a vamp holder having a carrier 29. A clamping plate 33 is pivoted at opposite ends to lugs 34 on the carrier. Leaf springs 35 fastened at their rear ends to lugs 34 urge downward the forward end of clamping plate 33 to grip the vamp in the manner shown in Fig. 2. A finger piece 37 fast to the plate 33 furnishes means whereby the plate may be tilted about its pivots to permit the vamp to be placed in and removed from the holder. Mounted on the supporting plate 19 in advance of the vamp holder is a guiding device for locating the vamp in the holder, said device comprising a guide carrier 39 and a guide, shown as a straight edge 41. The guide carrier 39 may be connected with the holder carrier 29 by bars 43 provided with slots 45 through which extend loosely the stems of screws 47 which are threaded into the lugs 34 of the holder carrier. Springs 49 connected at their rear ends to pins 51 on the bars 43 and at their forward ends to the lugs 34 normally maintain the guide spaced from the vamp holder as shown in Fig. 2, the extent of the separation being determined by the position of stops 53 which are adjustably mounted on the bars 43. These stops are slotted at 55 to receive the stems of screws 57 which hold them in adjusted position on the bars 43.

The plate 19 may conveniently be provided with a center line 70 and symmetrically arranged with respect to this are a series of regular markings illustrated as squares 72 separated by rather heavy lines. To facilitate the accurate placing of the vamp in the gage it is desirable to make the squares of two contrasting colors, for instance one group of squares may be white or of a light color and the other group of a dark color, the squares of each color being arranged so as to be bilaterally symmetrical with respect to the center line 70. In the illustrated embodiment the outer longitudinal rows of squares are white, the longitudinal rows adjacent to these are red, and the two median rows are white with the exception of two pairs of squares arranged toward the rear and in such a position that parts or the whole of one or both of these pairs of squares will ordinarily be visible through the throats of the vamps of the different sizes to be operated upon. It is to be understood that this specific arrangement of squares is shown for illustrative purposes only and that it is not essential that the figures be squares but simply that they be of a simple symmetrical form arranged in a simple pat-

tern symmetrical with respect to the line with respect to which the work is to be positioned.

Assuming now that a vamp 100 is provided with a suitable locating mark such as 200 upon the broad side thereof, that is, upon the right side of a right vamp or the left side of a left vamp, and that the guide 41 has been correctly positioned with respect to the vamp holder, the vamp is placed in the holder with the mark 200 in alinement with the front edge of guide 41 and in such a position that the arrangement of the squares visible in the throat thereof is symmetrical, as clearly shown in Fig. 1. The position of the vamp longitudinally in the holder is thus determined by the relation of the guide 41 to the holder and the correct location of the vamp laterally of the support 19 is easily determined by the operative in accordance with the appearance of the squares and parts of squares visible through the throat of the vamp. In order to facilitate adjustment of the stops 53, these stops may be provided with pointers which co-operate with a suitably graduated scale on the bars 43, as shown in Fig. 2, and in order to facilitate grasping the vamp holder to push it forward two pins 59 project from its under side.

The operation of the device is as follows: The operator is furnished with vamps marked as indicated at 200 and is also furnished with data showing how far from the throats of the vamps the center of the pattern punching is to be located. With this data he first sets the stops 53. He next inserts a vamp in the holder with the mark 200 registering with the forward edge of the guide 41 and in such a position that the squares and portions of squares visible through the throat of the vamp on both sides are symmetrical. Then grasping the vamp holder with his thumbs and forefingers, he pushes the holder to the punching mechanism. Both the guide and the holder move forward until the guide carrier 39 contacts with and is arrested by the bar 23 which serves as a stop. Thereafter the holder moves forward until its carrier 29 is arrested by contact with the guide carrier 39 at which time the toe portion of the vamp is properly located with respect to the punching mechanism and punch block 15 is caused to descend.

Fig. 2 shows in perspective and Fig. 1 diagrammatically the vamp properly located in the vamp holder ready to be advanced. Fig. 3 shows the vamp in position to be punched, the springs 49 being extended, the guide carrier 39 in contact with the bar 23, and carrier 29 in contact with carrier 39.

Although the invention has been set forth as embodied in a particular machine it is to be understood that the invention is not limited in the scope of its application to the particular machine shown and described.

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

1. A machine of the class described having, in combination, means for operating upon the forward portion of a vamp, a work support provided with a symmetrically arranged group of symmetrical figures so that the vamp may be accurately positioned in accordance with the visibility of the figures through the throat of the vamp, and means for transferring the vamp from the work support to the operating means.

2. A machine of the class described having, in combination, means for ornamenting the forepart of a vamp, a work support, a group of symmetrically arranged symmetrical markings on the work support for locating the vamp symmetrically with respect to the ornamenting means, and means for engaging the vamp to move it forward into operative relation to the ornamenting means without disturbing its arrangement symmetrically with respect thereto.

3. A machine of the class described having, in combination, perforating means, a work support to hold a blank to be perforated, a work carrier movable over the work support to present the blank to the perforating means, and a group of markings upon the surface of the work support arranged to co-operate with a characteristic of the blank for accurately locating the blank in the work carrier.

4. A machine of the class described having, in combination, a work support having a surface marked off into a series of symmetrically arranged symmetrical figures, perforating means, and a work carrier to transfer the work from the work support to the perforating means.

5. A machine of the class described having, in combination, a work support having a surface marked off by a number of heavy lines into a series of symmetrically arranged symmetrical figures, perforating means, and a carrier to transfer the work from the work support to the perforating means.

6. A machine of the class described, having, in combination, a work support having a surface provided with a series of symmetrically arranged symmetrical figures, said figures being of two contrasting colors, the figures of each color being symmetrically arranged upon said surface, perforating means, and a carrier to transfer the work from said work support to the perforating means.

7. A machine of the class described, comprising a punch and punch block, and a work support having a surface provided with a group of symmetrical markings, said group of markings and said punch being

both arranged symmetrically with respect to the same axis of symmetry.

8. A machine of the class described having, in combination, means for operating upon the forward portion of the vamp, a work support to hold the vamp to be operated upon, a work carrier movable over the work support to present the vamp to the operating means, and a group of markings upon the work support symmetrically arranged with respect to an axis passing through the operating means so that when a vamp is positioned on the work support in such a manner that the markings visible through its throat are symmetrically arranged, the center line of the vamp will coincide with said axis.

9. A machine of the class described having, in combination, perforating means, a work support to hold a blank to be perforated, a work carrier movable over the work support to present the blank to the perforating means, means to position the blank longitudinally with respect to the work carrier, and a group of markings upon the surface of the work support arranged to co-operate with a characteristic of the blank for accurately locating the blank in the work carrier.

10. A machine of the class described having, in combination, perforating means, a work support to hold a vamp to be perforated, a work carrier movable over the work support to present the vamp to the perforating means, means to position the vamp longitudinally with respect to the work carrier, and a number of symmetrical figures upon the surface of the work support symmetrically arranged with respect to an axis passing through the perforating means, the different figures being of two contrasting colors and the figures of each color being symmetrically arranged with respect to said axis to facilitate the symmetrical positioning of the throat of the vamp upon the work support.

11. A machine of the class described having, in combination, perforating means, a work support to hold a vamp to be perforated, a work carrier movable over the work support to present the vamp to the perforating means, a straight edge to co-operate with a mark upon the vamp to position the vamp longitudinally with respect to the work carrier, and a number of heavy lines marked upon the work support and forming symmetrical figures symmetrically arranged with respect to an axis passing through the perforating means so that when a vamp is positioned on the work support with its throat symmetrically arranged with respect to said axis it may be moved by the carrier to work perforating position.

12. A machine of the class described having, in combination, perforating means, a work support, to hold a vamp to be perforated, a work carrier movable over the work support to present the vamp to the perforating means, means to position the vamp longitudinally with respect to the work carrier, and a group of markings upon the work support, symmetrically arranged with respect to an axis passing through the perforating means so that when a vamp is positioned on the work support in such a manner that the markings visible through its throat are symmetrically arranged, the center line of the vamp will coincide with said axis.

13. A device for positioning vamps with respect to an operating mechanism, comprising a straight-edge for co-operation with a mark on the vamp and a flat member having a surface provided with a group of symmetrically arranged figures so located that when the vamp is arranged with its throat symmetrical with respect to the group of figures the vamp will be symmetrically arranged with respect to the operating mechanism.

14. A device for facilitating the presentation of a piece of work to operating mechanism so constructed that the portion of the work to be operated upon is not visible to the operator when the blank is in position to be operated upon, comprising a work support, a blank holder movable over the work support from a position in which the blank held therein is in full view of the operator toward the mechanism, and a group of markings upon the surface of the work support arranged to co-operate with a characteristic of the work for accurately locating the work in the holder.

15. A vamp positioning device comprising a supporting surface provided with a number of symmetrical markings arranged in a bi-laterally symmetrical group, so that when a vamp is positioned in such a manner that the arrangement of the markings visible through its throat is bi-laterally symmetrical, the center line of the vamp will be superimposed upon the axis of symmetry.

16. A machine for perforating vamps, having, in combination, operating means comprising a punch and a punch block, a support for vamps, and means for positioning the vamps with reference to the operating means, comprising a number of polygons marked off on the support and arranged symmetrically about an axis.

17. A device for positioning vamps, comprising a vamp supporting surface marked off into a number of polygons, the polygons being arranged in groups having contrasting colors to facilitate positioning the vamps.

18. A device for positioning vamps comprising a surface marked off into a number of polygons, said polygons being of two

contrasting colors the polygons of each color forming a group symmetrical with respect to a single axis of symmetry.

19. In a device for positioning vamps, a surface marked off by a number of heavy lines into a number of squares, said squares being of two contrasting colors, the squares of each color forming a group symmetrical with respect to a single axis of symmetry.

20. A device for positioning blanks comprising a surface provided with two visually distinguishable groups of symmetrical figures, the two groups being symmetrically arranged with respect to a single axis of symmetry.

21. A device for positioning blanks comprising a surface provided with two groups of symmetrical figures, the two groups being symmetrically arranged with respect to a single axis, the figures of the first group being of a color contrasting with that of the figures of the second group.

22. A device for positioning blanks comprising a surface marked off into a plurality of rows of squares, the squares of the outer rows being of a color contrasting with that of the squares of the rows adjacent thereto, the arrangement of squares of each color being symmetrical with respect to a median line.

23. A device for positioning blanks comprising a surface marked off by a number of heavy lines into a plurality of rows of squares, the squares of the outer rows being of a color contrasting with that of the squares of the rows adjacent thereto, and the median squares being some of one color and some of the other, the arrangement of squares of each color being symmetrical with respect to a median line.

24. A device for positioning blanks comprising a surface marked off by a number of heavy lines into a number of symmetrical figures symmetrically arranged with respect to an axis of symmetry, the figures forming a plurality of groups, each group being symmetrical with respect to said axis, and the figures of each group being of a color contrasting with that of the figures of the other groups.

25. A device for positioning blanks comprising a surface marked off by a number of heavy lines into a number of symmetrical figures symmetrically arranged with respect to an axis of symmetry, the figures forming two groups, each group being symmetrical with respect to said axis, and the figures of one group being of a color contrasting with that of the figures of the other group.

In testimony whereof I have signed my name to this specification.

HARRIET HITCHINGS WHITCOMB.