

July 11, 1939.

H. S. LYNESS

2,165,394

CUTTING DIE

Original Filed Nov. 13, 1935

Fig. 1.

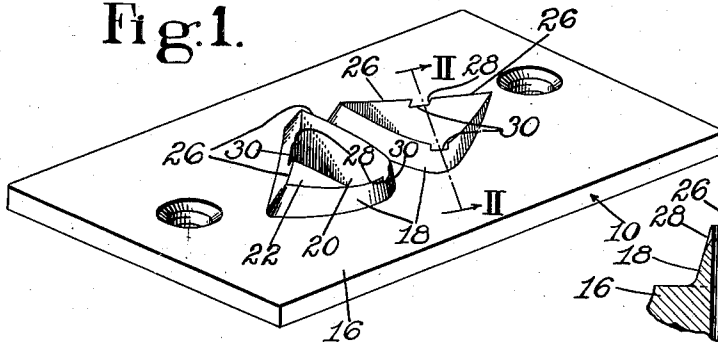


Fig. 2.

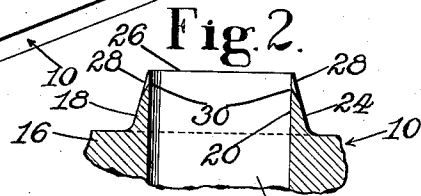


Fig. 4.

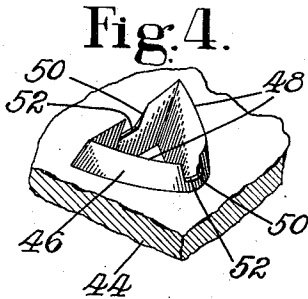


Fig. 3.

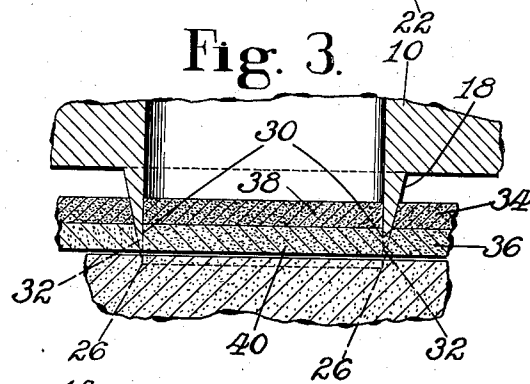


Fig. 5.

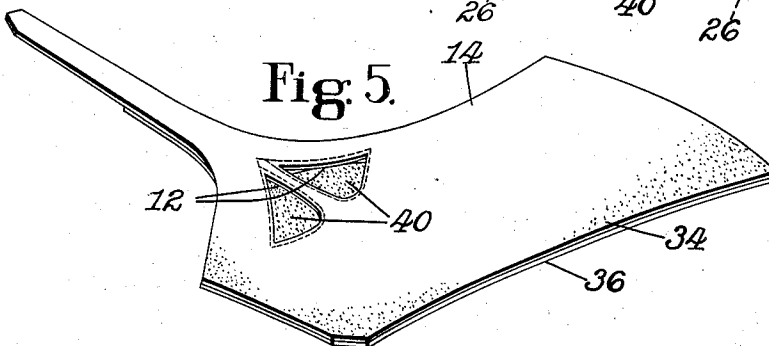
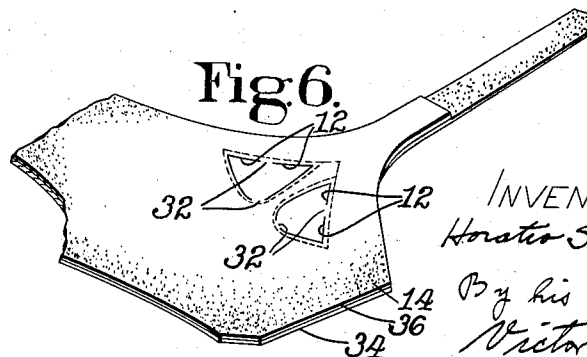


Fig. 6.



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UNITED STATES PATENT OFFICE

2,165,394

CUTTING DIE

Horatio S. Lyness, Lynn, Mass., assignor to
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Original application November 13, 1935, Serial
No. 49,523. Divided and this application April
15, 1937, Serial No. 137,088

4 Claims. (Cl. 164—29)

This invention relates to cutting dies and is herein illustrated as embodied in dies for forming ornamental cut-outs in shoe uppers. This application is a division of application Serial No. 49,523, filed November 13, 1935, in my name.

In the manufacture of shoes, particularly women's shoes, it is common practice to form ornamental cut-outs or openings to constitute a design in the shoe uppers. One way of producing such designs, as heretofore practiced, has been to form the cut-out designs in flat blanks of upper material and lining which are later incorporated in the shoe uppers.

However, difficulties have been experienced in this connection due to the fact that in lasting the shoes the material adjacent to the cut-outs will stretch resulting in distortion of the cut-out designs and rendering it more difficult to shape the uppers of the shoes perfectly to the last. Another method of producing cut-out designs has been to form cut-outs in an upper blank, to secure a lining to the blank, to assemble the shoe and substantially complete it, and then to form the cut-outs in the lining by means of a trimming machine. In this operation, however, considerable skill upon the part of the operator may be required in order to obtain satisfactory results because of the difficulty of operating the trimming knife to form the smaller portions of the designs such as sharp corners.

In view of the foregoing, I have invented the method of ornamenting shoes which constitutes the subject-matter of the aforementioned application and which consists in severing the material of an upper blank to form a cut-out except for small bridging portions of the lining, or of all the layers of the upper, which connect the main body of the upper blank and the material to be removed, incorporating the blank in a shoe and thereafter, either before or after the last is pulled from the shoe, severing said bridging portions to complete the cut-out. This method is advantageous in that the greater portion of the cut-out design can readily be formed in an upper blank as distinguished from a shoe and, because of the bridging portions remaining, the upper can be lasted without distorting the design. It is to be noted further that the operation of severing the bridging portions can easily be done by hand and at any time after the shoe has been lasted.

It is an object of the present invention to provide a die for carrying out the aforesaid method. Preferably and as shown, the die comprises a wall corresponding in shape to the outline of a cut-out

to be produced and terminating in a cutting edge, the wall being recessed so that the cutting edge will not completely sever the cut-out from a blank but will leave bridging portions of the lining, or of both the outer layer of the upper and the lining for the purposes above indicated.

The invention in these and other aspects will be apparent from the following detailed description when taken in connection with the accompanying drawing and will be set forth in the claims.

In the drawing,

Fig. 1 is a perspective view of a die illustrating one embodiment of my invention;

Fig. 2 shows a cross-section of a portion of the die taken along the lines II—II of Fig. 1;

Fig. 3 is an enlarged sectional view of the die illustrating the manner in which the die operates upon an upper blank;

Fig. 4 is a perspective view illustrating a modified form of die;

Fig. 5 is a top view of an upper blank with cut-outs partially formed therein; and

Fig. 6 is a view showing the reverse side of the blank of Fig. 5.

Figs. 1, 2 and 3 of the drawing illustrate a die 10 adapted for use in partially forming cut-outs such as cut-outs 12 in quarter blanks 14 (Figs. 5 and 6). As shown, the die 10 comprises a base 16 and one or more cutting blades 18 mounted upon the base. Each of the cutting blades comprises a vertical wall 20 formed about an opening 22 in the base 16, and which corresponds in shape to the outline of a cut-out to be produced in a blank. The outer side of the wall is beveled, as indicated by reference character 24, Fig. 2, and terminates in cutting edges 26 which lie in a plane. The wall 20 is recessed to form oppositely disposed notches 28 and the wall at the bases of the notches is beveled to form auxiliary cutting edges 30 spaced from the plane of the edges 26. The width of the notches 28 corresponds to the width of the bridging portions to be formed in the blanks, for example such as the bridging portions 32 in the upper blank 14, Fig. 6. The manner in which such bridging portions are formed is illustrated on an enlarged scale in Fig. 3 in which the position of the die 10 is shown after a cutting operation upon an upper blank comprising an outer layer 34 and a lining 36. As shown, the cutting edges 26 have penetrated completely through the outer layer 34 and the lining 36 and the cutting edges 30 have likewise penetrated through the outer layer 34 but have only partially entered the lining 36 with the result that

a section of material 38 has been completely severed from the outer layer 34 and a section 40 has been severed from the lining 36 except for bridging portions 32.

- 5 In some instances it is desirable partially to sever both the outer layer and lining of a blank leaving bridging portions in both members. To this end, I have provided a modified form of die which, as illustrated in Fig. 4, comprises a base 10 44 supporting a cutting blade 46 terminating in cutting edges 48 and having notches 50 in the blade, the construction being similar to that of the die illustrated in Figs. 1 and 2, except that the blade at the bases 52 of the notches is not 15 sharpened and the distance from the bases 52 of the notches to the plane of the edges 48 is sufficiently great so that the bases of the notches will not engage the material of the blank as the edges 48 pass through it, thus leaving bridging portions 20 of the entire thickness of the blank connecting the body portion of the blank with the material to be removed. Dies thus constructed are particularly adapted for use with materials which are flimsy or which are more likely to stretch 25 during the lasting operation with the consequent result that stronger bridging portions are needed.

Preferably, in using a die of the type above described, the die is attached to a reciprocating member in a suitable press and is forced against

a piece of work located upon a cutting block to cause the cutting edges of the die to penetrate the work partially to form a cut-out opening therein except for narrow bridging portions left in the work opposite the notches in the die. 5

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

1. A die comprising a wall beveled to form a cutting edge or edges lying in a plane, the wall 10 having notches therein and being beveled at the bases of the notches to form auxiliary cutting edges.

2. A hollow die having a wall corresponding in shape to the outline of a cut-out to be produced 15 in a blank and terminating in a cutting edge lying in a plane, and notches in the wall having at the base thereof cutting edges in alinement with the first mentioned cutting edge.

3. A die comprising a blade bent to form a 20 continuous wall and having a base portion and a marginal portion which terminates in a cutting edge having spaced recessed portions therein.

4. A cut-out die comprising a wall terminating in a single cutting edge portion corresponding in 25 shape to the outline of a cut-out opening to be produced in a blank and having sharp oppositely disposed recessed portions.

HORATIO S. LYNESS.

CERTIFICATE OF CORRECTION.

Patent No. 2,165,394.

July 11, 1939.

HORATIO S. LYNESS.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, first column, line 5, after "name" and before the period insert --which eventuated in United States Patent No. 2,118,889, granted May 31, 1938--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 4th day of June, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.