T. LUND.

DIE.

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1,340,235. **Patented May 18, 1920.**

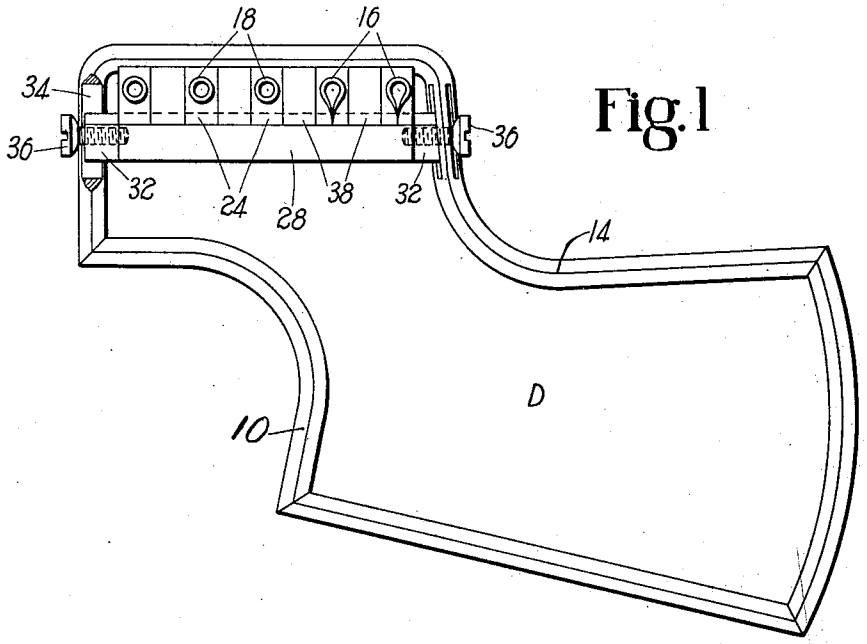


Fig. 1

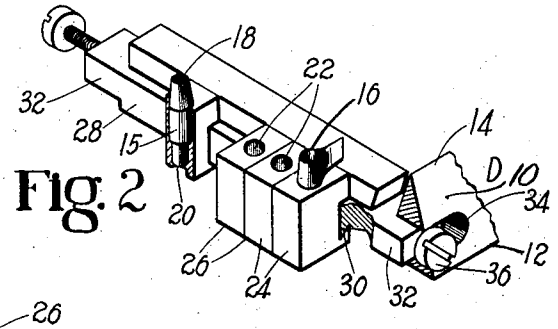


Fig. 2

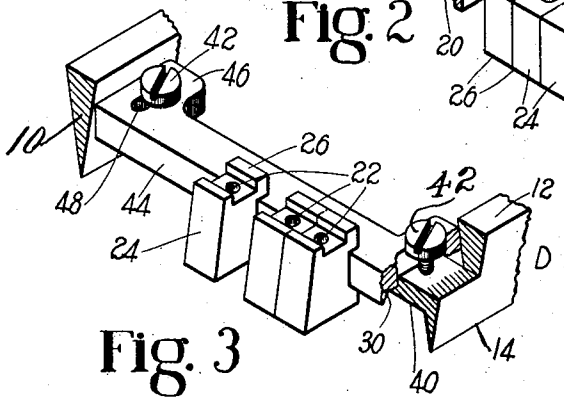


Fig. 3

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UNITED STATES PATENT OFFICE.

THOMAS LUND, OF BEVERLY, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

DIE.

1,340,235. Specification of Letters Patent. Patented May 18, 1920.

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To all whom it may concern:

Be it known that I, THOMAS LUND, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain Improvements in Dies, 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.

My invention relates to dies and especially to those in which one or more cutting members are associated with a primary cutting edge to act upon the material severed thereby.

In such dies, of which those for cutting the portions of shoes with such openings as buttonholes or eyelet-holes formed therein furnish an instance, it may be desired to vary the relation of the secondary cuts to the edge of the cut material. The object of this invention is to provide a convenient arrangement for this purpose by which the secondary cutting members may be positioned readily and secured firmly.

To effect this object a feature of the invention consists of novel means for mounting the cutting member, as the punch of a button-fly or eyelet-row die, for movement with respect to the cutting edge of the die itself. As herein disclosed, there are a plurality of such members consisting of punches carried together upon a movable support. This support, as illustrated, is furnished by a bar secured at its extremities to the wall of the die by connections permitting its movement. An easily made and firm connection is furnished by a slot, which may be in the die extending in the same general direction as its cutting edge and with which slot the bar coöperates, being secured therein by a screw.

In the accompanying drawing,—

Figure 1 illustrates a particular embodiment of the invention, it being shown as a top plan view with a portion broken away;

Fig. 2 is a perspective view of the punch support, showing a portion of the coöperating die wall, and

Fig. 3 is a perspective view illustrating another form of my improved die.

I have shown at D a die having a continuous wall 10 provided with a pressure surface 12 and a cutting edge 14 of such form that it is adapted to cut the button-fly portion of a shoe, though it will be obvious that the invention may be applied to dies designed to produce other objects in which is an opening-row. To make cuts within the piece severed by the edge 14 of the die, secondary cutting members or punches 15 are provided, which may have operating edges as indicated at 16 and 18 of such contour as to cut respectively buttonholes and eyelets. Each of these punches has a shank 20, so shaped as to enter and be retained within an opening 22 of a carrier block 24. The dimensions of the blocks and punches are preferably such that when the operating edges 16 or 18 of the punches are in the same plane as that of the die the opposite faces 26 of the blocks will lie in the plane of the pressure surface 12. To maintain the blocks and punches in their correct relation to the die and to permit them to be adjusted so that the openings cut by the punches may be located at different distances from the opening-row edge of the cut material, they are mounted upon a support, preferably furnished by a bar 28 undercut at 30 to allow the blocks to be applied to and retained against displacement laterally of the correspondingly formed bar while they can be moved longitudinally thereof. At each end of the bar 28 is a reduced portion 32 of such thickness as to fit a slot 34 formed in the wall of the die above the edges which sever the upper and lower edges of the stock at the ends of the opening-row portion and extending in a direction generally parallel to the cutting edge 14. Extending through each slot 34 and being threaded into the corresponding extremity of the bar 28 is a screw 36, the under side of the head of which may be turned into contact with the outer wall of the die to clamp the end of the bar in position. The bar and its reduced portions 32 have such relative dimensions, that when the screws 36 are removed the ends 32 may be successively introduced into the slots 34 or withdrawn therefrom, to enable the operator to apply the proper punches to the bar and fix them in position in the die, spacing blocks 38 being interposed between the punch blocks to obtain the desired location of the punches along the bar.

Different manufacturers may wish to locate buttonholes or eyelets at different dis-

tances from the opening-row edge of the fly, and with the arrangement herein described the operator, after applying to the bar 28 the proper punch blocks and spacing blocks, may place the portions 32 of the bar in the slots in the die and adjust them longitudinally of the slots until the preferred relation of the punches to the adjacent cutting edge is obtained, where the bar may be fixed by tightening the screws 36. If for any reason the manufacturer wishes to change this relation, it is only necessary to loosen the clamping screws and re-adjust the bar, thereafter clamping it in its new position.

In the arrangement of the die shown in Fig. 3, instead of having slots formed in the die wall, said wall is provided with opposite inwardly extending lugs 40, 40, in the horizontal faces of which are openings to receive screws 42, 42. The supporting bar 44 has right-angle extensions 46, 46, one at each extremity, in which extensions are slots 48 through which pass the screws 42. The bar extensions may be moved over the supporting surfaces of the lugs in the same manner as the portions 32 of the arrangement already described are adjusted in the slots 34 and may be clamped by the screws 42. In other respects, this organization may be the same as that of Figs. 1 and 2.

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

1. A die having a wall provided with a continuous cutting edge, a member supported at its extremities on opposite portions of the wall and arranged for movement toward and from an intermediate wall portion, and cutting members carried upon the movable member for adjustment with respect to the cutting edge of the intermediate wall portion.

2. A die having a wall provided with a continuous cutting edge, a member supported at its extremities on opposite portions of the wall and arranged for movement toward and from an intermediate wall portion, and cutting members variable in position upon the movable member, they being thus adjustable along and toward and from the intermediate wall portion.

3. In a die for cutting the opening-row portion of shoes, a wall provided with a cutting edge arranged to sever the edge of the stock along the opening-row and adjacent cutting edges to sever the upper and lower edges of this portion of the stock at the ends of the opening-row, and a series of punches mounted to move upon the end portions of the wall toward and from the opening row edge.

4. In a die, a wall provided with a cutting edge, a bar extending from one portion of the wall to another, and a plurality of cutting members carried by the bar, there being slotted connections between the wall and bar permitting their relative movement.

5. In a die, a wall provided with a cutting edge and with a slot, a supporting member coöperating with the slot, and a cutting member carried by the supporting member.

6. In a die, a wall provided with a cutting edge and with a slot extending in the same general direction as said cutting edge, a supporting member coöperating with the slot, and a cutting member carried by the supporting member.

7. In a die, a wall provided with a cutting edge, and a slot, a bar entering the slot, and a screw threaded into the bar and engaging the wall of the die.

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

THOMAS LUND.