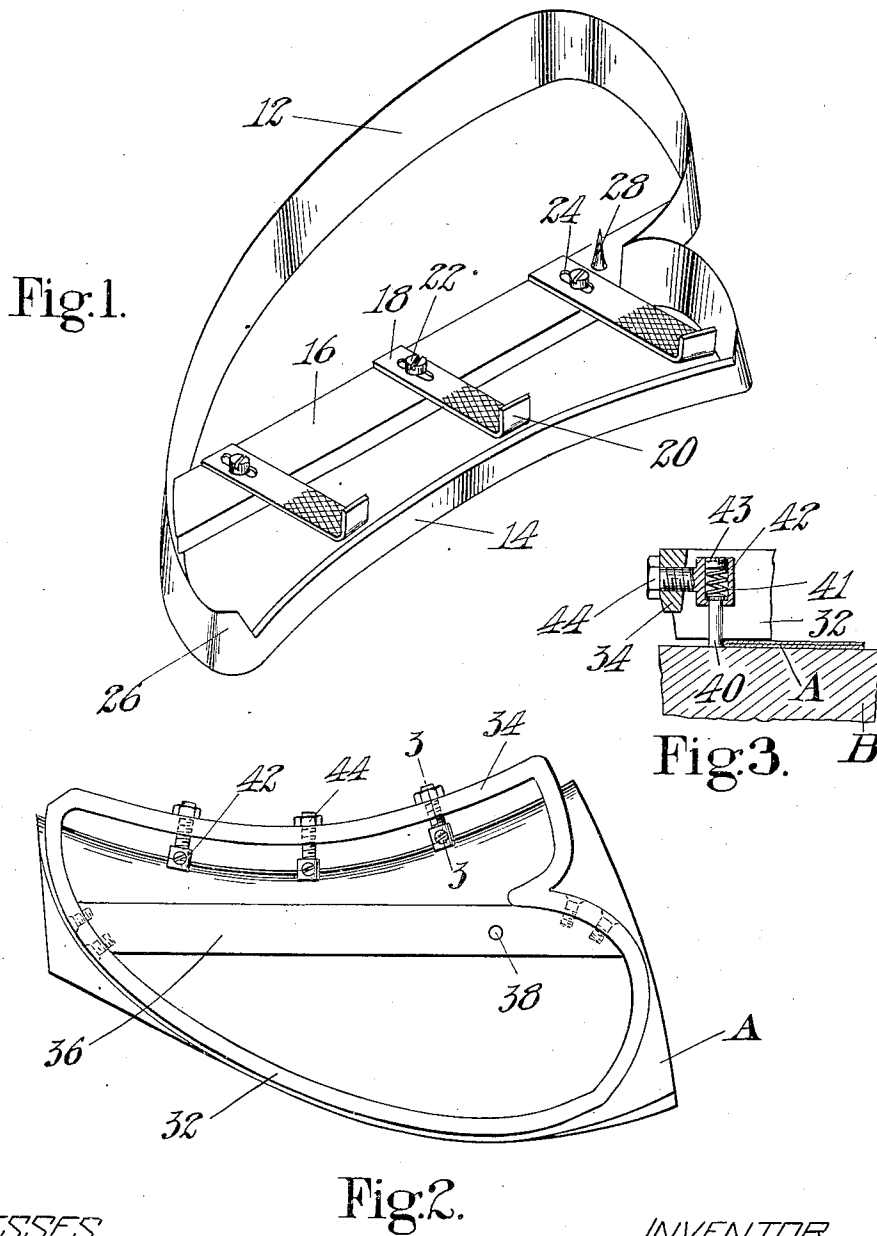


T. LUND.
 RECUTTING DIE.
 APPLICATION FILED AUG. 23, 1909.

1,054,127.

Patented Feb. 25, 1913.



WITNESSES.

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Fig. 2.

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RECUTTING-DIE.

1,054,127.

Specification of Letters Patent.

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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 Recutting-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.

This invention relates to dies for cutting thin sheet material, such as upper leather for boots and shoes, and particularly relates to dies adapted for use with a clicking press for recutting folded blanks.

In the manufacture of boots of certain styles, notably bluchers, it is necessary to crimp or mold the vamps after they have been cut or blocked out, in order that in the lasting process this portion of the upper may conform smoothly to the surface of the last, and in order to avoid the excessive tension necessary to pull an uncrimped vamp over a last.

The crimping process distorts the blanks, and forms, in effect, a bulge at the center thereof, with the result that the blanks cannot conveniently be laid flat for recutting but preferably are cut in a folded condition.

An object of the present invention, accordingly, is to provide a die which may be used conveniently for recutting folded and crimped vamps.

Different kinds of leather vary greatly in regard to their stretching when strained during the lasting process, some blanks yielding much more than others. For this reason the shoe manufacturer, when dealing with non-stretching leather, prefers to cut the blanks rather full or slightly larger than the pattern in order to assure sufficient stock for lasting in the vamp. On the other hand when the leather is of a stretchy nature the blanks may be cut closely to, or slightly smaller than, the pattern, especially as regards the width of the blank.

With these considerations in view, it is another object of my invention to provide a die for cutting blanks of the character described, having certain provisions for adjustment whereby the size or width of the blank produced may be varied according to the kind of leather in use.

Another object of the present invention is to provide a gage device for a clicking-press

die, whereby the die may be properly located on a previously cut out blank and utilized for performing a secondary operation on the blank, such as recutting for example. In this connection a feature of the invention of particular importance as related to recutting dies, consists in the provision of a gage of such construction and arrangement that the various portions thereof may be independently adjusted so that the general outline of the gage may be adapted to different curvatures of the folded blank and the die made to correspond to the curve imparted to the blanks by differently shaped plates in crimping machines. Such an arrangement has the further advantage that it permits the proportions of the blank to be varied according to the style desired. For instance, by a lateral adjustment of the toe portion of the gage a blank having a wider or narrower toe may be produced.

A preferred embodiment of my invention, as applied to a die for recutting vamps, comprises a cutting blade shaped to cut the outline of a folded vamp and a yielding gage device for engaging the folded part of the vamp and determining the location of the die with respect to the blank. Preferably the gage may comprise a plurality of yieldingly mounted stops adapted to engage the folded part of a blank at different points on its contour and being adjustable laterally with respect to the cutting portion of the die.

The advantages above set forth and others incident to the present invention will be best understood and appreciated from the following description of two embodiments of the invention selected for purposes of illustration and shown in the accompanying drawings in which,—

Figure 1 is a view in perspective of an inverted recutting die embodying the present invention. Fig. 2 is a plan view of a recutting die provided with a modified gage device, showing the die in position for cutting a folded vamp. Fig. 3 is a sectional view on the line 3—3 of Fig. 2 showing one of the gage members.

The die as a whole consists of a continuous frame of strip steel, or other suitable material, bent to conform in contour with the outline of the blank to be cut and sharpened on one edge for cutting. The other edge of the frame is thickened and flattened to receive the pressure from the arm of a

clicking press and lies in a plane parallel with that of the cutting edge. As shown in Fig. 1 the cutting portion 12 conforms with the outline of the marginal and upper edges of a vamp and the lower edge of the portion 14, which conforms approximately with the curvature of the folded edge of the blank, is ground away, forming a bridge. By making the bridge 14 of the same contour as the folded edge of the vamp the die may be readily placed in the proper location with respect to the blank to be cut without the use of gages by bringing the bridge 14 and the similarly curved edge of the vamp into parallel relation. A supporting bar 16 extends longitudinally of the die and is rigidly connected with the opposite sides of the cutting portion 12 by screws or other suitable fastening means. As herein shown the die is equipped with a gage device to assist the operator in properly placing the die with respect to the blank. The gage device comprises a plurality of flat resilient arms 18 having downwardly extending gages 20 for engaging the folded portion of a vamp and determining the location of the die with respect thereto. The arms 18 are adjustably connected with the bar 16 by the set screws 22 which extend through slots 24 in the arms. The lower surfaces of the arms 18 are roughened or corrugated to prevent the folded blank from slipping away from the gages 20 before the cutting operation. By loosening the screws 22 and moving all the gage members laterally to or from the bar 16 correspondingly narrower or wider blanks may be produced, while the general outline of the gage may be varied by independently adjusting the arms 18 to bring the gages 20 into the desired curve. The lower edges of the gages 20 normally project below the plane of the cutting edge of the die by an amount approximately equal to the double thickness of a vamp, thus allowing the die to lie horizontally with its cutting edges resting upon the folded blank A and the gages resting on the cutting bed B as indicated in Fig. 3, the gages being permitted to move upwardly with respect to the cutting edges during the cutting operation by the resiliency of the arms 18.

In the pulling over process it is a great convenience for the operator to have the exact location of the center of the toe plainly indicated in order that the shoe may be so placed in the pulling over machine that the toe grippers shall grip the upper at the desired point. To this end the die illustrated in Fig. 1 is provided at its toe end with a portion 26 of the cutting blade which extends at an angle with the contour of the die and this portion serves to cut off the corner of the folded blank forming a notch in the outline of the blank at the center of the toe. For indicating on the vamps cut out

by the die herein disclosed, the proper location for the quarters in the assembled upper, the stab or marker 28 is provided and is mounted on the bar 16.

Figs. 2 and 3 illustrate a recutting die having a modified gage device but in other respects similar to that already discussed. Referring to Fig. 2, the cutting portion 32 of the die is shaped to cut the upper and marginal edges of a vamp while the gage members are carried in studs 42 adjustably mounted on the bridge piece 34 of the die. Lateral adjustment of the studs 42 is effected by loosening the set nuts 44 and screwing the studs in or out of the bridge piece. The gage members comprise pins 40 slidably mounted in the apertured studs 42 and yieldingly maintained in their extended position by springs 41 bearing on plugs 43 which close the upper ends of the apertures. The bar 36 serves to stiffen and strengthen the die, provides a mounting for the marker 38, and also serves as a convenient handle in manipulating the die.

In operation a crimped vamp A is folded and laid upon the cutting bed B of a clicking press or between other plane pressure surfaces. The gage members are first adjusted for the desired width and curvature and the die is then placed on the vamp with the gage members bearing against the fold and the cutting blades lying upon the folded part of the blank, as shown in Figs. 2 and 3. Pressure is then applied to the upper surface of the die whereupon the cutting operation takes place and simultaneously the marker pricks through both thicknesses of the blank making the quarter locating marks and the corner of the fold is cut off making the center indicating notch.

It is to be noted that the recutting die above described is complete in itself and may be used between any parallel pressure surfaces, being adapted to be placed wherever convenient or wherever the work may be located. This is an important advantage and one which distinguishes the present recutting die from the various cutting machines used heretofore, in which knives or punches have been mounted on, or formed as a part of, a reciprocating head or cutting bed cooperating with a pressing member. To distinguish in terms from such devices I have referred to my novel die in certain of the following claims as an "unattached die."

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

1. A device of the class described, comprising an endless frame shaped to conform in contour substantially with the outline of a folded vamp and having a portion sharpened for cutting the marginal edges of a folded vamp and an unsharpened portion

arranged to extend substantially parallel to the fold in said vamp.

2. A device of the class described, comprising a continuous frame having a portion thereof bent to conform in contour with the outline of the marginal and upper edges of a folded vamp and an unsharpened portion connecting said cutting portions and conforming in contour approximately to the curvature of the fold in said vamp.

3. A device of the class described, comprising a continuous frame, a portion thereof conforming in contour with the marginal edges of a folded vamp and being provided with a cutting edge lying in a single plane, and another portion of the frame conforming in contour approximately with the fold in said vamp and having its lower edge lying in a plane above the plane of the cutting edge first mentioned.

4. An unattached die of the class described, having a cutting edge shaped to cut one side of a folded blank, a corresponding pressure receiving surface, and a gage mounted upon the side of the die opposite to the cutting edge and being adjustable laterally relatively to the cutting edge, whereby the die may be adapted for cutting blanks of various widths.

5. A die adapted for use between plane pressure surfaces, comprising a cutting portion shaped to conform in contour substantially to the folded edges of a crimped vamp, a portion extending approximately parallel with the fold of said vamp and a gage carried by the die and located in proximity to said latter portion for determining the location of the die with respect to said vamp.

6. A die adapted for use between plane pressure surfaces, comprising a cutting portion shaped to conform in contour substantially to the folded edges of a crimped vamp, a connecting portion extending between the ends of said cutting portion, and independently adjustable gage members carried by the die and arranged near said connecting portion for determining the location of the die with respect to the fold in said vamp.

7. An unattached die for recutting folded vamps, comprising a frame having a cutting portion thereof shaped to conform to the marginal edges of a blank, and a gage carried by said die for determining the location of said cutting portion laterally with respect to the blank, said gage having provision for adjustment to and from said cutting portion of the die, whereby the width of the finished blank may be varied.

8. A die for recutting folded vamps, comprising a frame having a cutting portion shaped to conform to the marginal edges of a blank, a gage-carrying member attached

to said frame and a line of gage members mounted on said gage-carrying member and having provision for independent lateral adjustment whereby the curvature of the gage line may be varied.

9. A die for recutting folded vamps, comprising a frame having means for cutting the marginal edges of a blank and a device carried by the die for determining the location of the cutting means with respect to the blank, said device comprising a plurality of resilient arms having angularly extending blank engaging ends.

10. A die for recutting folded vamps, comprising a frame having means for cutting the marginal edges of a blank and a device carried by the die for determining the location of the cutting means with respect to the blank, said device being constructed and arranged to prevent relative lateral slipping of the blank and die before the cutting operation.

11. A die for recutting vamps, having a cutting portion conforming in contour substantially to the outline of the marginal edges of a folded vamp, the ends of said cutting portion being connected by an unsharpened portion, and edge gages for the fold of a vamp located within the line joining the ends of the cutting portion.

12. A die having parallel cutting and pressure receiving edges, a gage mounted on the die for determining the location thereof relatively to a previously cut blank and a marker also mounted on the die.

13. An unattached die having an endless plane pressure receiving surface and a cutting edge non-continuous with reference to the pressure receiving surface, said die having a gage-carrying member extending across its interior and a gage mounted thereon.

14. An unattached die having an endless plane pressure receiving surface, a cutting edge oppositely disposed with respect to a portion of said pressure receiving surface leaving a space between the ends of said cutting edge and a gage disposed between the ends of said cutting edge.

15. A die comprising a frame having an endless unbroken pressure receiving surface and an oppositely disposed cutting edge, together with an adjustable gage carried by the die for determining the location thereof with respect to a previously cut out blank.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS LUND.

Witnesses:

HERBERT W. KENWAY,

JOHN F. DAVEY.