

O. M. PATTERSON.

DIE.

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945,799.

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Fig. 1.

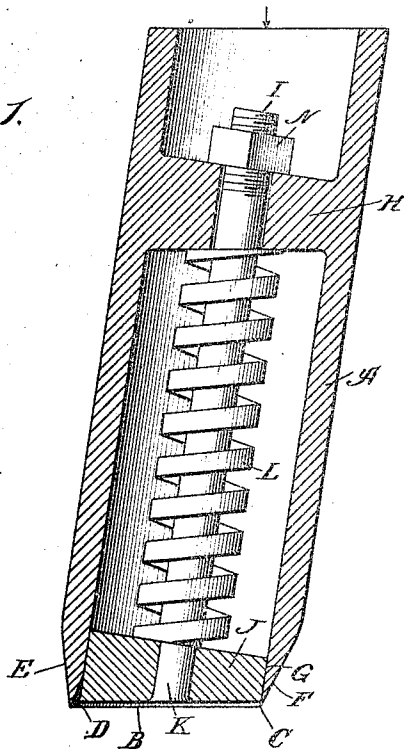


Fig. 2.

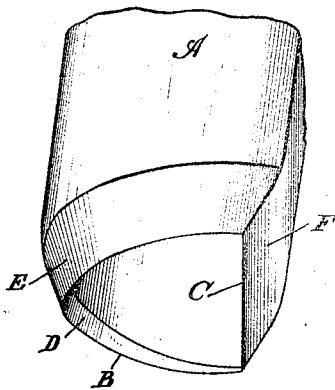
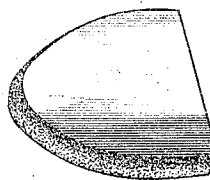


Fig. 3.



Witnesses:

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OSCAR M. PATTERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE H. VAN PELT, OF CHICAGO, ILLINOIS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OSCAR M. PATTERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dies, of which the following is a specification.

My invention relates to a die for stamping out of leather what are termed in the art of making shoes, "top-pieces", that is, the final or lowermost lifts of the heels of boots or shoes.

The invention has for its object to provide a die of simple and cheap construction which will form the edges of the lifts which it cuts out on a bevel. In order to give these top-pieces the beveled conformation, it has been customary to stamp them out with straight edges, that is, with the edges at right angles to the upper surface of the leather and then to compress the lifts in compressing machines which give the desired bevel to the edges. The amount of compression which it is necessary to give the leather in order to force it into the bevel shape often results in making the top-piece so tough and hard that it is difficult to blind-nail it.

The top-pieces of heels are usually secured to the rest of the heel by nails which are set points up in the heels, and the top-pieces driven upon the point of these nails, which operation is accomplished by suitable machinery. It has been found that top-pieces compressed to the bevel in compressing machines are often so hard and tough as to bend these nails.

It is one of the objects of my invention to provide a die which will form the lifts as they are cut out with the bevel, thus doing away with the necessity for using the compressing machine. Of course the compressing machine may be used to give additional bevel by compression when desired. My invention provides, however, for constructing the die so that the top-piece, though cut on a bevel is also subjected to a certain amount of compression which increases the bevel and serves to harden and finish the edge of the top-piece, and particularly the leather at the angle between the edge and what in the finished shoe is the lower surface of the heel. In a sense, therefore, my die is a combined die and compressor.

A further object of the invention is to give the die such a construction as will prevent

it from breaking out at the corners between the curved edge which cuts out the back and sides of the lift and the straight edge which makes the cut at the forward end of the heel.

The invention has for further objects such new and improved constructions in dies, and in particular in dies for cutting beveled top-pieces as will be described in the following description and particularly specified in the claims appended thereto.

The invention in one of its embodiments is illustrated in the accompanying drawings, wherein—

Figure 1 is a longitudinal section through the die with parts shown in elevation. Fig. 2 a perspective view of the cutting end of the die, and Fig. 3 a view in perspective of a top-piece produced by the die.

Like characters of reference indicate like parts in the several figures of the drawings.

A represents the body of the die which consists of a hollow piece of steel with its lower end beveled so as to form the curved cutting edge B and the straight cutting edge C. Obviously, the edge C might be slightly concaved if desirable. I use the term straight to distinguish it from the curved or bowed edge which cuts out the side and back of the lift. The curved edge B, it will be observed, is formed in part by the internal bevel D, and this bevel preferably tapers down to the junctions between edges B and C. This internal bevel causes the compression of the edge of the lift as it is being cut out, thereby finishing and hardening the leather at the angle between the upper surface of the leather—the lower when the shoe is worn—and its edge. When made necessary by the thickness of the steel, the die may be beveled externally as shown at E. The internal bevel D, it will be seen, produces a corresponding inclination of the edge of the top-piece, but it is not intended under ordinary circumstances that the desired inclination should be obtained entirely by compression in this way. The die is constructed so that it makes an oblique cut. To this end the die is constructed so that it stands obliquely on the leather, that is, it is constructed with the cutting edges C, D in a plane which is oblique to the axis of the die, or in other words, oblique to the direction of the force applied to the die in making the cut. The upper end of the die is preferably cut off or formed on a corresponding angle.

The cut will give an obliquity equal to the tilt of the die. A further beveling of the top-piece is effected by the internal bevel of the die. In a die of this character the greatest resistance occurs at the corners between the curved edge and the straight edge. It is here that lift cutting dies are most likely to break and where they do, in fact, frequently break. The tilt of the die, however, giving to the edge C an oblique cut through the leather decreases, as I apprehended, the resistance of the leather to the die at these critical points. It will be seen that the edge C is formed by a single external bevel F, the inner surface G at this place being parallel with the lines of movement of the die in cutting. There is, therefore, no compression between the lift and the die along the edge C. The body of the die is preferably formed with an internal web H having a bore, through which extends the stem I of a block J, which, preferably, is of a form to fit somewhat snugly but with capacity for movement in the inside of the die; the stem being connected with the block in any desired manner, as for example, by having its end K of reduced diameter and riveted into a perforation in the block. Between the block and web H is a compression spring L, preferably of very considerable strength. As I construct these dies, the spring is such as to exert some three hundred pounds pressure when block J is forced up the thickness of ordinary sole leather, although I do not limit myself to a spring of any particular strength. The nut N holds the block J at the proper position in the die which as shown is preferably just a trifle above the edge of the die. The block J serves to strip the die of the lifts as they are stamped out. It also compresses, flattens and smooths the lifts in conjunction with the internal bevel D.

It will be seen that a die of this construction does away with the use of a compressing machine, thus cheapening the manufacture of the shoe. It gives a certain amount of compression to the lift and hardens and finishes the edge thereof. The die may be put into an ordinary bar machine and pressure exerted upon it as shown by the arrow in Fig. 1. The lifts as they are cut, are stripped from the die instead of being forced up through the die with the danger of buckling, which has been the ordinary way of cutting top-pieces.

I do not wish to be limited to the exact forms and construction shown, as modifications might be devised which would come within my invention as defined by the claims.

It might be that some of the desirable features to which attention has been called in the specification might be omitted without sacrificing all of the advantages of my invention. I believe, however, that the die

constructed substantially as shown and described will prove the best for the work of cutting out beveled top-pieces. While the die is intended for this particular sort of work, dies might be constructed on similar principles for other sorts of work in which the same conditions are met with.

I claim:

1. A die for forming heel lifts, comprising a hollow body having cutting edges lying in a plane oblique to the axis of said die, a block within said body which engages the upper surface of the leather when the die is forced into the leather and a compression spring against the tension of which said block works.

2. A die for forming heel lifts, comprising a hollow body having cutting edges lying in a plane oblique to the axis of said die, a block within said body which engages the upper surface of the leather when the die is forced into the leather, a stem on said block, a web within said hollow body through which said stem is guided and a compression spring interposed between the block and said web.

3. A die for forming heel lifts, comprising a hollow body having a curved cutting edge and a straight cutting edge said edges lying in a plane oblique to the axis of the die, said curved edge formed with an internal bevel, a block within said body which engages the upper surface of the leather when the die is forced into the leather, and a compression spring against the tension of which said block works.

4. A die for forming heel lifts, comprising a hollow body having a curved cutting edge and a straight cutting edge, the curved cutting edge being formed by an external bevel and an internal bevel and the straight edge being formed entirely by an external bevel, a block within said body which engages the upper surface of the leather, and a compression spring against which said block works.

5. A die for forming heel lifts, comprising a body provided with a curved cutting edge and a straight cutting edge, the curved edge being formed with an internal bevel, and said edges lying in a plane oblique to the axis of said die.

6. A die for forming heel lifts, comprising a body provided with a curved cutting edge and a straight cutting edge, said straight cutting edge being formed entirely by an external bevel and said edges lying in a plane oblique to the axis of said die.

7. A die for forming heel lifts, comprising a body provided with a curved cutting edge, and a straight cutting edge, said edge lying in a plane oblique to the axis of said die, the curved edge being formed with an internal bevel, and a straight edge being formed entirely by an external bevel.

8. A die for forming heel lifts, comprising a body provided with a curved cutting edge, and a straight cutting edge, said edge lying in a plane oblique to the axis of said die, the curved edge being formed with an internal bevel, and a straight edge being formed entirely by an external bevel, a block within said cutting edges and a compression spring against the tension of which said block works.

9. A die for forming a heel lift comprising a hollow body having a straight cutting edge and a curved cutting edge, said curved cutting edge being formed with an internal bevel which tapers down to the junctions with the straight edge, a block within said body which engages the upper surface of the leather, and a compression spring against which said block works.

10. A die for forming a heel lift comprising a hollow body having a straight cutting edge and a curved cutting edge, said curved cutting edge being formed with an internal bevel which tapers down to the junctions with the straight edge, a block within said body which engages the upper surface of the leather, a compression spring against which said block works, said edges lying in a plane oblique to the axis of said die.

11. A die for forming a heel lift comprising

a hollow body having a straight cutting edge and a curved cutting edge, said curved cutting edge being formed with an internal bevel which tapers down to the junctions with the straight edge, a block within said body which engages the upper surface of the leather, a compression spring against which said block works, said edges lying in a plane oblique to the axis of said die, and said straight edge being formed entirely by an external bevel.

12. A die for forming heel lifts comprising a hollow body having a curved cutting edge formed by an internal bevel and an external bevel, and a straight cutting edge formed entirely by an external bevel, said edges lying in a plane oblique to the axis of said die, and said internal bevel being tapered toward the junctions of the curved edge with the straight edge, a block within said body which engages the upper surface of the leather, a stem on said block, a web in said body in which said stem is guided, and a spring interposed between said block and said web.

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Witnesses:

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