T. LUND.

DIE.

APPLICATION FILED DEC. 17, 1918.

1,374,934. Patented Apr. 19, 1921.

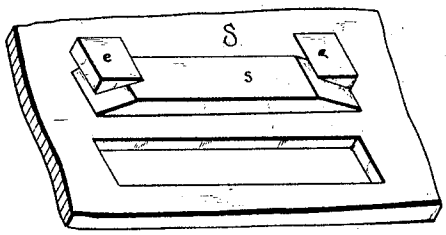


Fig. 3.

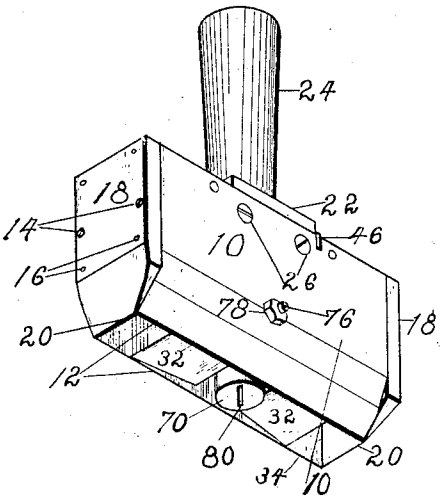


Fig. 2.

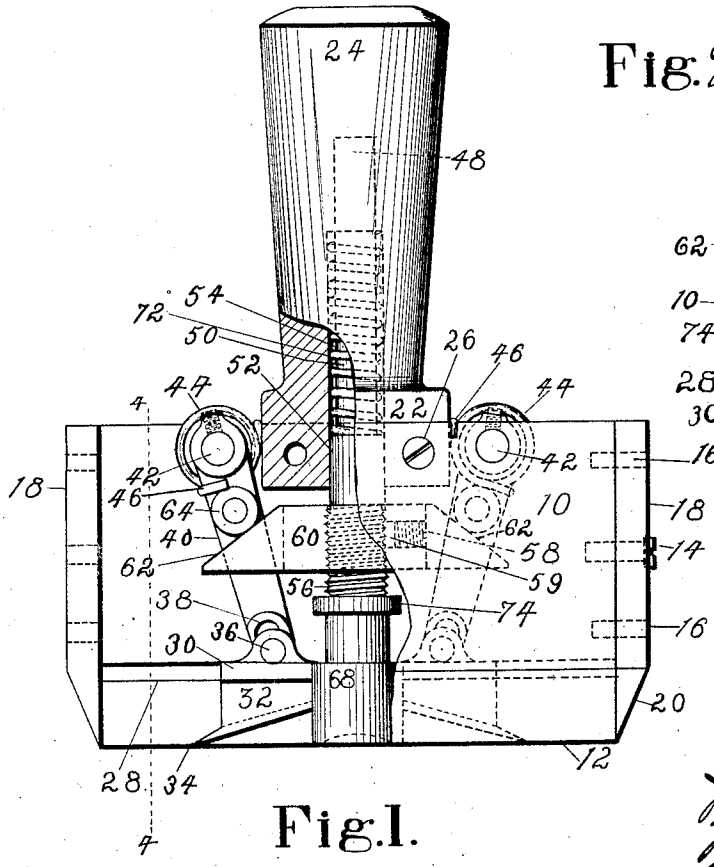


Fig. 1.

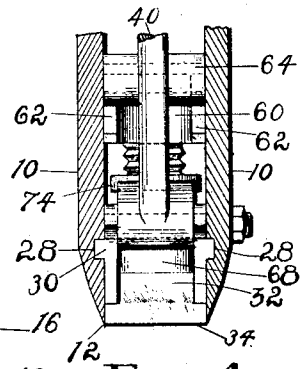


Fig. 4.

INVENTOR

Thomas Lund

By his Attorney

Edward Howard

UNITED STATES PATENT OFFICE.

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

DIE.

1,374,934. Specification of Letters Patent. Patented Apr. 19, 1921.

Application filed December 17, 1918. Serial No. 267,176.

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.

This invention relates to dies, and especially to cutting dies adapted to bevel one or more of the edges of the piece cut.

The object of the invention is to produce a simple and efficient device of this character.

A feature of the invention consists in the provision of a member having cutting edges and being adapted to carry other elements of the device, there being a cutting member movable relatively to the carrier member, and means movable upon the carrier member to actuate the cutting member while the carrier member is producing its cut. In the form of the invention hereinafter disclosed, there are cutting edges on opposite side walls of the die, between which walls cutting members move in opposite directions. I prefer to mount the cutting member, or cutting members if more than one is employed, in a guideway in the carrier wall and actuate it by a member movable upon the carrier. This actuating member I have illustrated as being guided by the handle portion of the die, to which cutting pressure may be applied, and operated through an inclined surface acting upon a link pivoted to the carrier member and to the cutting member.

Another feature of the invention consists in a die the wall of which has a cutting edge toward which a cutting member moves in the cutting operation. In the preferred embodiment of my invention, the die has side and end walls, both with cutting edges, and the cutting member is movable between the side walls into proximity with the edge upon an end wall. Two oppositely situated cutting members are shown coöperating with the respective end walls.

Still another feature concerns means for adjusting the actuating member to vary the operation of the cutting member. This may be accomplished by changing the relation of the inclined surface of the actuating member, such change being preferably effected by a contact member adjustable upon the actuating member.

In the accompanying drawing,

Figure 1 is a side elevation of a beveling die disclosing my invention in a particular form, parts being broken away;

Fig. 2 is a perspective view of the die;

Fig. 3 shows a piece of stock upon which the die has operated; and

Fig. 4 is a detail in transverse section on the line 4—4 of Fig. 1.

I have chosen to describe the invention as applied to a die for cutting from such stock as leather, shown at S in Fig. 3 of the drawings, narrow strips *s* having parallel opposite sides and beveled ends, which strips may be used for the shank welts of shoes. For this purpose my improved die includes opposite side walls 10, 10 each having at its lower portion a cutting edge 12. Secured to the ends of these walls by screws 14 and pairs of pins 16 are end walls 18, of less length peripherally of the die than the side walls and having corresponding cutting edges 20. These side and end walls give a die member having a continuous edge adapted to produce a rectangular strip. The side walls are bridged by an enlargement 22 upon the lower end of a handle or pressure-receiving member 24 secured to the walls by screws 26.

Along the inside of the side walls, preferably parallel to the cutting edges 12, are opposite guideways 28 to receive flanges 30 upon a pair of cutting members 32, 32. At the outer side of each member toward the corresponding edge 20 of the end wall and lying in the plane thereof is a cutting edge 34 inclined downwardly from the guideway. Pivoted at 36 on each cutting member through an elongated slot 38 at its lower extremity is a link 40 inclined upwardly and outwardly to a spindle 42 by which it is pivoted just below the upper edges of the side walls. Springs 44 surrounding the spindles and having hooked ends 46 engaging the links and walls 10 serve to hold the cutting members 32 at their normal inward positions farthest removed from the edges of the end walls.

Extending axially of the handle from the enlarged end is a bore 48 in which is mount-

ed for reciprocation a plunger 50 having a cylindrical end portion 52 of greater diameter than the remainder of the plunger, this portion 52 operating within a counterbore 54 in the handle. The enlargement 52 is threaded at 56, and engaging this thread and secured frictionally against free rotation thereon by a screw 58 and contact piece 59 is a block 60 furnishing the actuating portion of the plunger. At the outer ends and on the upper side of the block are downwardly inclined surfaces 62 arranged to contact with antifriction rolls 64 mounted to turn upon the links 40 below their pivotal points 42. Engaging the thread 56 of the plunger at its lower extremity is a contact member 68, the outer end face 70 of which is forced into proximity with the plane of the cutting edges 12 and 20 of the die by a spring 72 surrounding the smaller portion of the plunger and being situated within the counterbore. The movement of the plunger is limited by a flange 74 at the top of the contact member 68, this striking the inner end of a screw 76 threaded through one of the side walls 10 and locked by a nut 78.

In using this die, the workman, grasping the handle 24, places the cutting edges 12 and 20 upon the stock to be cut and strikes the upper end of the anvil with a mallet or brings down upon it the beam of a press. As the cutting edges are forced through the stock, the member 68 is held against movement by the stock, the spring 72 yielding to permit the walls of the die with cutting members 32 to travel past it. By this relative movement the rolls 64 are caused to descend the inclines 62 of the actuating portion of the plunger, resulting in their being swung outwardly about the spindles 42, moving the members 32 in their guideways. The vertical and lateral movements cause the cutting edges 34 to enter the stock and pass through it in a direction which is a resultant of the combined travel. The angle of the surfaces 62 is such that the horizontal component is greater than the vertical, and when the cutting edges 12 and 20 have severed the stock, the edges 34 are in close proximity to the edges 20, removing a wedge-shaped end portion, indicated at *e* in Fig. 3, at each extremity of the welt strip *s*, thus giving this the desired bevel. By altering the position of the block 60 along the threaded portion of the plunger when assembling the parts of the die and by turning the contact portion 68, this latter operation being facilitated by a slot 80 at its lower extremity to receive a screw driver, the operation of the cutting members 32 may be controlled to give the desired extent of travel from their normal positions toward the edges 20 and at the proper time. When the operating pressure upon the handle ceases and the die is withdrawn from the stock, the spring 72 restores the plunger to its normal position, this acting as an ejector to remove the cut piece from between the die walls.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent of the United States is:—

1. A die comprising a carrier member provided with cutting edges, a cutting member movable relatively to the carrier member, and means movable upon the carrier member and effective during the cutting operation by said carrier member for actuating the cutting member.

2. A die comprising a carrier member provided with cutting edges, a cutting member movable in a direction inclined to the travel of the carrier member while cutting, and means movable upon the carrier member and effective during the cutting operation by said carrier member for actuating the cutting member.

3. A die having walls provided with cutting edges, cutting members movable in opposite directions between said walls, and means effective during the operation of cutting with said edges for actuating the cutting members.

4. A die having a wall provided with a cutting edge, and a member having a cutting edge movable in the cutting operation toward the cutting edge of the wall.

5. A die having fixed side walls and an end wall provided with cutting edges, and a cutting member movable between the fixed side walls into proximity with the cutting edge of the end wall.

6. A die having side walls and end walls provided with cutting edges, and opposite cutting members movable between the side walls into proximity with the cutting edges of both end walls.

7. A die comprising a carrier member, a cutting member movable thereon, and a link connecting the carrier and cutting member.

8. A die comprising a carrier member, a cutting member movable thereon, and a link and plunger coöperating with the carrier and cutting member.

9. A die having walls provided with cutting edges between which walls a cut piece is received, a cutting member movable between the walls, and a member movable upon the die and arranged to actuate the cutting member and eject the cut piece from the die.

10. A die having walls provided with cutting edges between which walls a cut piece is received, a cutting member movable between the walls into proximity with the cutting edge thereof, and a member movable upon the die and arranged to actuate the cutting member and eject the cut piece from the die.

11. A die having walls provided with cutting edges, a cutting member movable between the walls, and a spring-pressed actuating member for the cutting member extending into proximity with the plane of the cutting edges of the walls.

12. A die having a handle, a cutting member movable upon the die, and an actuating member for the cutting member guided by the handle.

13. A die having a cutting edge and a guideway, and a cutting member movable in the guideway toward and from the cutting edge.

14. A die having a wall provided with a cutting edge and a guideway formed in said wall, and a member movable in the guideway and having a cutting edge inclined with respect thereto.

15. A die having a cutting edge and a guideway, and a cutting member movable in the guideway parallel to the cutting edge.

16. A die having a cutting edge, a member movable on the die and having an inclined surface, and a movable cutting member actuated toward the cutting edge of the die by the inclined surface.

17. A die comprising a carrier member, a cutting member movable on the carrier member, an actuating member for the cutting member movable on the carrier member, and means arranged for adjusting the actuating member to vary the operation of the cutting member by said actuating member.

18. A die comprising a carrier member, a cutting member movable on the carrier member, a member movable on the carrier member and having an inclined surface for actuating the cutting member, and means arranged to vary the relation of the actuating incline to the cutting member.

19. A die comprising a carrier member, a cutting member movable thereon, a link connecting the carrier and cutting member, and an actuating member operating upon the link.

20. A die comprising a carrier member, a cutting member movable thereon, a link connecting the carrier and cutting member, and a member mounted to reciprocate on the carrier, said reciprocating member having a portion coöperating with the link.

21. A die comprising a carrier member, a cutting member movable thereon, a link connecting the carrier and cutting member, a member mounted to reciprocate on the carrier, and a contact member variable in position upon the reciprocating member.

22. A die comprising a carrier member, a cutting member movable thereon, a link connecting the carrier and cutting member, and means arranged to return the cutting member to its normal position.

23. A die comprising a carrier member, a cutting member movable thereon, a link connecting the carrier and cutting member, and a spring contacting with the carrier member and the link.

24. A die comprising a carrier member having opposite walls provided with guideways, a cutter member movable in the guideways between the walls, and a movable actuating member for the cutting member guided by the carrier member for movement between the walls.

25. A die comprising a carrier member having a wall provided with a cutting edge and a guideway, a cutting member movable in the guideway toward and from the cutting edge, and a movable actuating member for the cutting member guided by the carrier member.

26. A die comprising a carrier member having a wall provided with a guideway, a cutting member movable in the guideway, a link pivotally connected to the carrier member and cutting member, and a movable actuating member for the cutting member guided by the carrier member.

27. A die comprising a carrier member having a wall provided with a guideway, a cutting member movable in the guideway, a link pivotally connected to the carrier member and cutting member, and a movable actuating member for the cutting member guided by the carrier member and coöperating with the link.

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

THOMAS LUND.

Corrections in Letters Patent No. 1,374,934.

It is hereby certified that in Letters Patent No. 1,374,934, granted April 19, 1921, upon the application of Thomas Lund, of Beverly, Massachusetts, for an improvement in "Dies," errors appear in the printed specification requiring correction as follows: Page 3, line 72, claim 24, for the word "cutter" read *cutting*, and line 76 for the article "the" read *its;* and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 7th day of June, A. D., 1921.

[SEAL.]

KARL FENNING,

Acting Commissioner of Patents.

Cl. 164—29.