

No. 649,850.

Patented May 15, 1900.

C. W. LEVALLEY.
MACHINE FOR CUTTING BARS OR WIRES.

(Application filed Aug. 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2.

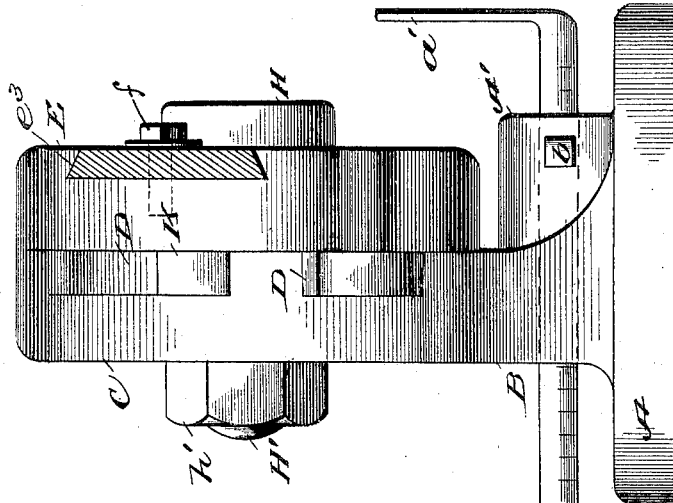


Fig. 1.

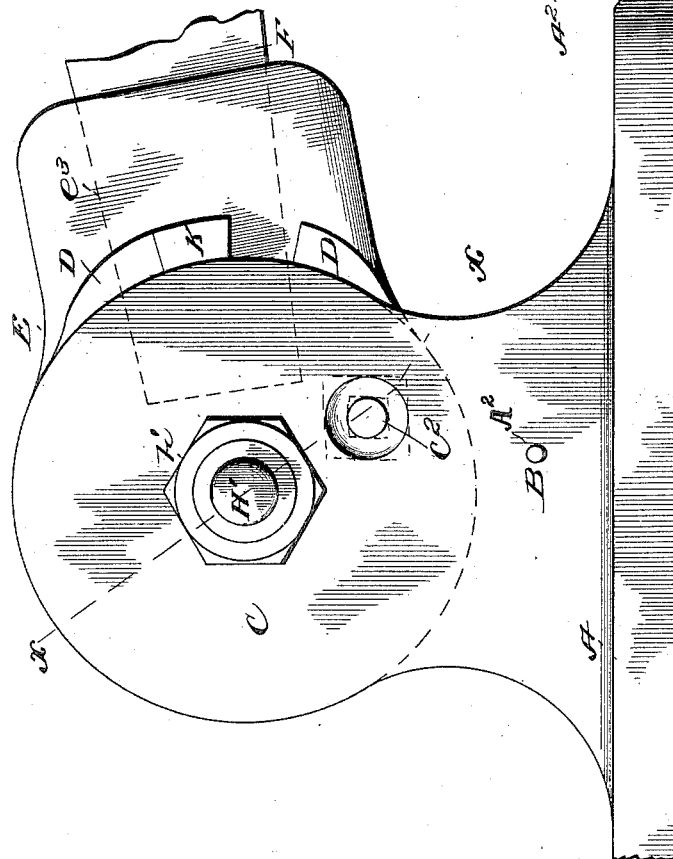
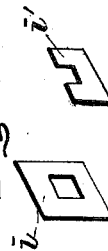


Fig. 7.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

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MACHINE FOR CUTTING BARS OR WIRES.

SPECIFICATION forming part of Letters Patent No. 649,850, dated May 15, 1900.

Application filed August 6, 1898. Serial No. 687,977. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Machines for Cutting Bars or Wires, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to machines for cutting wires or rods or small bars of metal, and has for its object to produce a machine of this character having certain improved construction and characteristics to be hereinafter pointed out.

Figure 1 is a side elevation. Fig. 2 is an end view of the apparatus, the operating-lever being represented in section. Fig. 3 is an elevation of the inner face of the die-plate. Fig. 4 is an elevation of the cutter-carrier. Fig. 5 is a section on line *xx*, Fig. 1. Fig. 6 is a detached view of the die. Fig. 7 shows in perspective two forms of the backing and adjusting washers.

Like reference-letters indicate like parts in all the figures.

A is the base, adapted to be secured to any suitable support. B is a short standard, and C is a die-plate, preferably circular in general outline, these three parts being usually cast integral.

A¹ is a tubular enlargement integral with the base and standard and provided with a horizontal seat *a*.

A² is a gage-bar carrying at one end a vertical stop *a'*, the bar having, preferably, a scale of inches marked upon it.

b is a set-screw in the tubular enlargement to hold the gage-bar in its adjusted positions.

C is the die-plate, provided upon its inner side with a die-seat *c*, which may be either angular, as indicated in full lines, or circular, as indicated in dotted lines in Fig. 3. When this seat is of angular form, the die, to be hereinafter described, can be held in different positions to insure practically-uniform wear upon all of its cutting edges. This die-seat is of a depth greater than the thickness of the die-plate which is seated therein, preferably about twice as deep as the plate is thick.

c' indicates a parti-circular recess or seat formed in the die-plate upon the side toward the die-seat. I prefer that it should be of the form illustrated in Fig. 3, though it may be extended so as to open into the die-seat, if found desirable.

C' is a pivot-seat in the die-plate.

D D are shoulders or abutments projecting from the periphery of the die-plate and are or may be integral therewith.

E indicates generally the cutter-carrier with a pivot-seat E', which I propose to make of a little greater diameter than the diameter of the corresponding pivot-seat in the die-plate.

e is a cutter-seat, preferably of about the same depth as is the die-seat and of the same size and form.

e' is a parti-circular hub projecting from the inner face of the cutter-carrier and of such external diameter as to fit closely within the parti-circular seat or recess *c'* of the die-plate. This hub is not continuous, but is open or cut away on the side toward the cutter-seat *e*, its bounding or terminating walls or shoulders *e² e²* being far enough apart to permit the necessary oscillations of the carrier about its pivot without said shoulders coming into contact with the die, as will be explained hereinafter.

e³ is a somewhat-shallow socket to receive a lever F, and in practice I prefer to make this socket slightly tapering from the periphery of the carrier toward its center, as is indicated in dotted lines, Fig. 2, and detailed in cross-section, the lever being secured in place by a set-screw *f* or in some other convenient way.

H H' represent a pivot-bolt, of which the end H' is somewhat smaller in diameter than is the other end H, the latter portion being of a length substantially equal to the thickness of the cutter-carrier at that point, with a shoulder at *h*, in order that the nut *h'* may be screwed up tightly without forcing the cutter-carrier into contact with the die-plate in such manner as to produce an undesirable friction between these parts, as the shoulder *h* will bear against that part of the face of the die-plate C which is situated between the ends of the recess *c'*.

I is a die provided with a hole for the passage of the rods and wires to be cut, of such

shape and size in plan as to fit quite closely within the die-seat *c* and of such thickness as the character of the work to be done shall indicate will be found advantageous. The

5 hole for the rods or wires to be cut to pass through should be concentric with the axis of the hole *C*² in the die-plate, and the die itself may be of any usual or approved material and temper.

10 Between the die and the bottom of the die-seat I propose to interpose a series of backing and adjusting washers *i i* of quite thin material—such, for instance, as tin-foil, or other material which is not unduly compressi-

15 ble—and of the same size and form in plan as the die, and of such number as may be required to hold the die practically in plane with the adjacent face of the die-plate when all the parts are in working position.

20 *J* is the cutter, provided with a hole for the passage of the rods and wires to be cut, it being of substantially the same shape and size in plan as to fit its seat *e*, and *j j* are a series of backing and adjusting washers corresponding to washers *i*, and from the above

25 description and an examination of the drawings it will be readily understood that by the addition of more washers any wearing away of the exposed or the engaging faces of the

30 die and the cutter may be compensated for and said cutter and die always maintained in proper working contact or relation, these washers constituting a very simple and efficient means for making such adjustments.

35 These washers also constitute a simple and efficient means for making the primary adjustment or alinement of the die and the cutter into suitable working position relative to the other parts of the mechanism, it being

40 evident that by using segments of said washers, such as represented at *i'*, Fig. 7, when needed very accurate adjustments can be made and maintained.

The presence of the engaging hub *e'* and the parti-circular seat *c'* greatly increases the wearing pivotal surface, and thereby adds to the durability of the machine.

K is a lug projecting from the inner face of the cutter-carrier into the open space between

50 the shoulders or abutments *D D* and engaging therewith to limit the oscillation of the said carrier in both directions, particularly in its upward movement, stopping it at such point that the holes in the die and cutter shall register properly to permit the bar, bolt, or wire

55 to pass readily through. Such limitation of the oscillation of the cutter-carrier is also useful, because it prevents any injury which might otherwise occur by reason of contact of

60 the shoulders *e*², or either of them, with the die

I or the washers *i*, or with the ends of the slot *c'*, which lie in the path of travel of said shoulders in case their movement be unrestricted.

Having thus explained the best mode now known to me for carrying my invention into

65 effect, I will state that I do not wish to be limited to the precise details of construction herein set forth, because many modifications will suggest themselves to a person skilled in the art without departing from the spirit of

70 my improvement or going outside of its scope.

What I claim is—

1. In a machine for cutting bars or wires, the combination of a stationary die-plate provided with a seat to hold the die, a movable

75 cutter-carrier provided with a seat to hold the cutter, and means for adjusting the die and the cutter toward each other, substantially as set forth.

2. In a machine for cutting bars or wires, the combination of a stationary die-plate provided with a central aperture or pivot-seat, a recess concentric thereto, and a seat to hold a die, a cutter-carrier provided with a central

80 aperture or pivot-seat, a hub-like projection adapted to fit the said recess in the stationary die-plate, and a seat to hold the cutter, and a pivot-bolt passing through said apertures and uniting the die-plate and cutter-carrier, substantially as set forth.

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3. In a machine for cutting bars or wires, the combination with a plate provided with a seat for a die, of a series of washers adapted to adjust the die relative to the face of the plate, substantially as set forth.

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4. In a machine for cutting bars or washers, the combination of a stationary plate provided with a seat to hold a die, said seat being angular in plan, of a die which is angular in plan and is adapted to be disposed in

100 different positions within its seat, substantially as set forth.

5. In a machine for cutting bars or wires, the combination of a stationary plate *C* provided with a die, and having the external

105 shoulders, *D*, and a recess, *c'*, and a cutter-carrier, *E*, pivoted to the stationary plate, and provided with a lug *K* arranged to lie between the shoulders *D* of the stationary plate, and to act as a stop to limit the extent of the move-

110 ments of the cutter-carrier, and provided also with a projection *e'* arranged to enter the recess *c'*, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTOPHER W. LEVALLEY.

Witnesses:

A. G. NETTER,

R. KRETCHMAR, Jr.