

D. G. Morris,

Bending Car Hooks.

No. 106,182.

Patented Aug. 9, 1870.

Fig. 1.

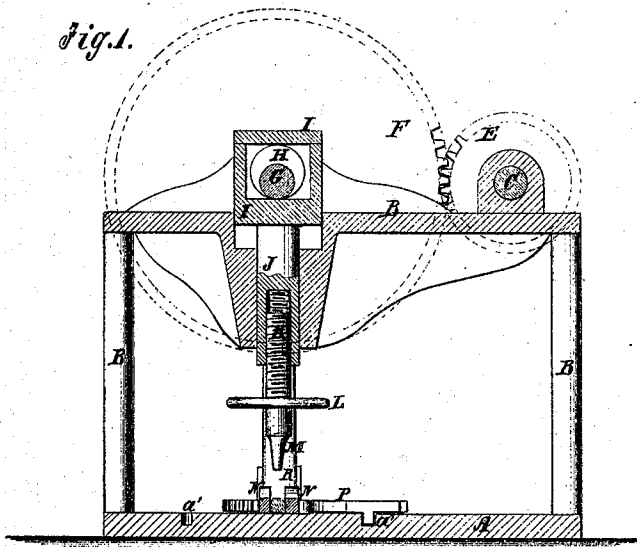


Fig. 2.

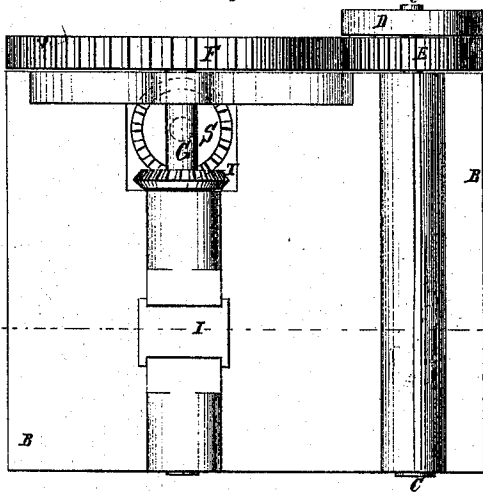
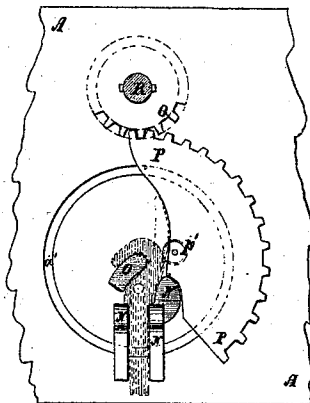


Fig. 3.



Witnesses:

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DAVID G. MORRIS, OF CATASAUQUA, PENNSYLVANIA.

Letters Patent No. 106,188, dated August 9, 1870.

IMPROVEMENT IN MACHINES FOR BENDING AND PUNCHING CAR-HOOKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, DAVID G. MORRIS, of Catasauqua, in the county of Lehigh and State of Pennsylvania, have invented a new and useful Improvement in Combined Punch and Bending Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a vertical section of my improved machine taken through the line *x x*, fig. 2.

Figure 2 is a top view of the same.

Figure 3 is a detail top view of the movable and stationary dies.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine designed more especially for bending and punching hooks, and which shall be simple in construction, convenient in use, and effective in operation; and

It consists in the construction and combination of various parts of the machine, as hereinafter more fully described.

A is the bed-plate, and

B is the frame-work of the machine.

O is the driving-shaft, which revolves in bearings attached to the upper part of the frame-work B.

To the end of the shaft O is attached a pulley, D, to which the power is applied.

To the shaft O is attached a gear-wheel, E, the teeth of which mesh into the teeth of the large gear-wheel F attached to the end of the shaft G, which revolves in bearings attached to the frame-work B.

To the shaft G is attached an eccentric, H, which works in a box, I, attached to, or formed upon, the upper end of the plunger J, which plunger is thus raised and lowered by the revolution of the said eccentric H.

The lower end of the plunger J is perforated and tapped, and into it is screwed the punch-holder K, which has a hand-wheel, L, securely attached to it, so that it may be easily turned up, to allow the article to be operated upon to be conveniently adjusted in place, and removed from its place, and down, to adjust the punch in proper working position.

M is the punch, which is secured in place in the holder K in the ordinary manner.

N are supports or jaws permanently attached to the bed-plate A, and which serve as guides to bring the blank into proper position to be operated upon by the bending-dies and punch, and hold them securely in position while being operated upon.

O is the stationary die, around which the blank is bent into form, and which is securely attached to the bed-plate A.

The blank is adjusted in place as shown in dotted lines, and is bent around the stationary die O by the movable die P.

The die P is made in the form of a segment of a circle, and has a segment of a ring projection formed upon its lower side, which fits into a circular groove, *a*, formed for its reception in the bed-plate A, to guide the said die, and hold it to its work as it moves forward in bending the blank to form the hook.

The face or edge of the die P is curved in about the manner shown in fig. 3, so that it may bear with an equal pressure upon all parts of the hook as it moves around the stationary die O.

p' is a small friction-wheel pivoted in a recess in the face of the die P, to bear against the blank, and press it down to the die O, thus diminishing the friction while bending the hook.

In the outer or curved edge of the movable die P are formed teeth which mesh into the teeth of the gear-wheel Q placed upon the lower part of the vertical shaft R, and connected with it by one or more leathers and grooves, as shown in figs. 1 and 3, so that the said gear-wheel may be raised upon the said shaft to throw it out of gear with the die P, to allow the said die to be moved back to its former position, and again lowered to throw it into gear with said die, while being all the time carried around by and with the said shaft R in its revolution.

The lower end of the shaft R revolves in a step or socket in the bed-plate A, and its upper end revolves in bearings in the frame B of the machine.

To the upper end of the shaft R is attached a bevel gear-wheel, S, the teeth of which mesh into the teeth of the bevel gear-wheel T attached to the horizontal shaft G, as shown in fig. 2.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination of the segmental movable die P *p*', stationary die O, guides or jaws N, grooved bed-plate A, and gear-wheel Q, substantially as herein shown and described, and for the purpose set forth.

2. In combination with the elements of the above claim, the punch M, substantially as and for the purpose shown and described.

3. The combination of the gear-wheel F, shaft G, eccentric H, box I, plunger J, punch-holder K, hand-wheel L, punch M, stationary guides and supports N, stationary die O, movable segmental die P *p*', grooved bed-plate A, gear-wheel Q, vertical shaft R, and bevel gear-wheels S T, with each other, and with the frame-work B, substantially as herein shown and described, and for the purposes set forth.

DAVID G. MORRIS.

Witnesses:

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