

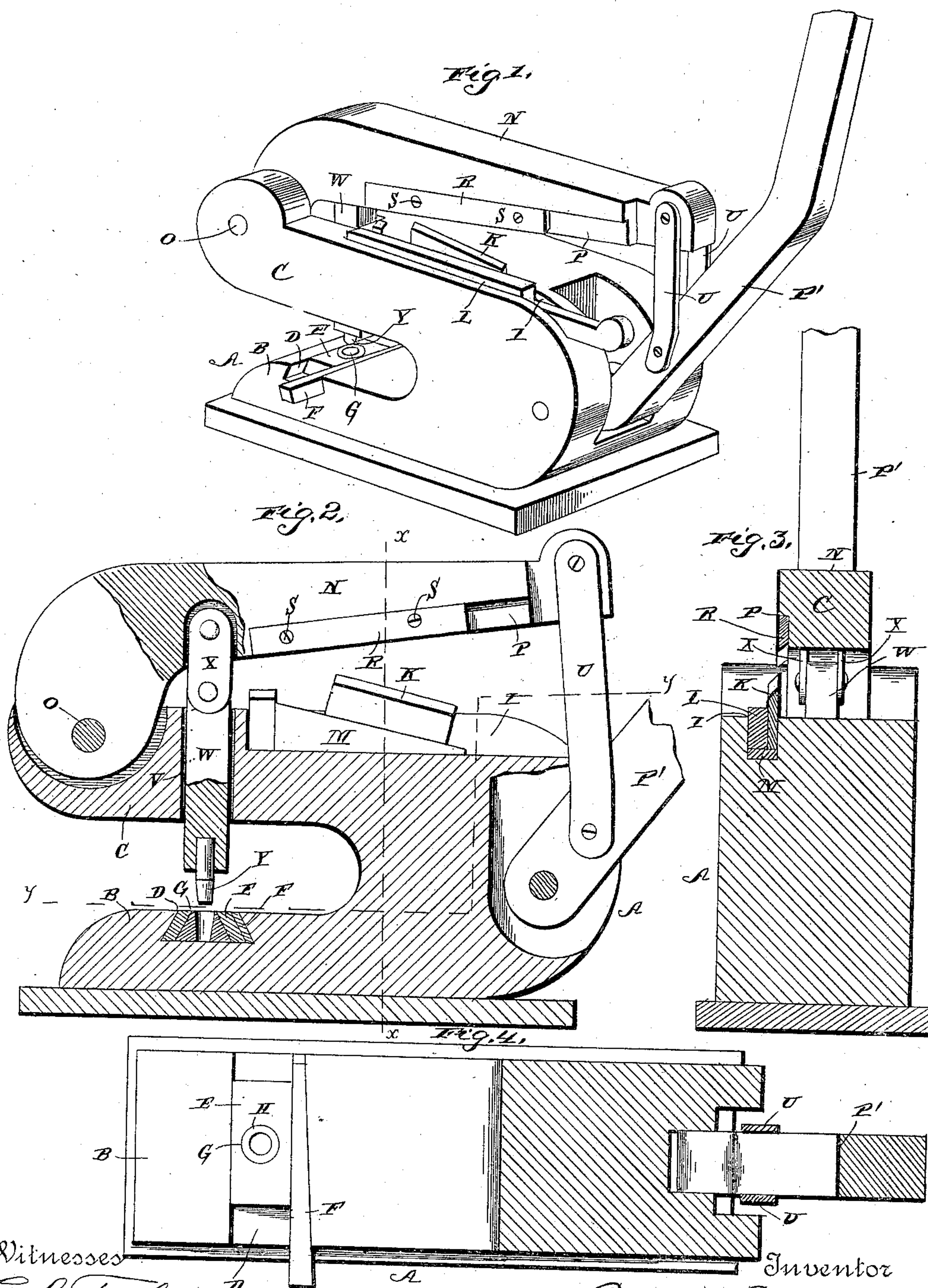
(No Model.)

C. CROTHERS.

COMBINED PUNCHING AND SHEARING MACHINE.

No. 368,571.

Patented Aug. 23, 1887.



Witnesses

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UNITED STATES PATENT OFFICE.

CALEB CROTHERS, OF WYANDOTTE, KANSAS.

COMBINED PUNCHING AND SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,571, dated August 23, 1887.

Application filed April 6, 1887. Serial No. 233,923. (No model.)

To all whom it may concern:

Be it known that I, CALEB CROTHERS, a citizen of the United States, residing at Wyandotte, in the county of Wyandotte and State of Kansas, have invented a new and useful Improvement in Punches and Shears, of which the following is a specification.

My invention relates to an improvement in punches and shears for cutting and punching iron or other metal; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a combined punch and shears embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a vertical transverse sectional view of the same, taken on the line *xx* of Fig. 2. Fig. 4 is partly a top plan view and partly a horizontal section taken on the line *yy* of Fig. 2.

A represents a casting forming the base of the punch and shears. From one end of the said casting projects a lower horizontal arm, B, and above the said arm, and at a suitable distance from the same, is a horizontal arm, C, which is somewhat longer than the arm B. In the upper side of the arm B, near the outer end thereof, is made a transverse dovetailed groove, D.

E represents a die-holder, which fits in the said groove, and F represents a wedge-shaped key adapted to bear between one side of the die-holder and the opposing side of the groove to secure the die-holder firmly in place therein. The die-holder is provided with a central opening, G, adapted to receive and retain the die H. A series of the dies H, having central openings of different sizes, are provided for the die-holder.

In the upper side of the arm C, near one edge thereof, is made a longitudinal groove, I, the lower side of which is horizontal.

K represents the lower blade or cutter, which is secured in one side of the groove I by means of a key, L.

M represents a wedge-shaped key, which is adapted to be inserted in the lower side of the groove I, and to bear under the lower

edges of the key L and of the blade or cutter K, in order to adjust the latter to the inclination shown in Fig. 1. This enables the cutters to be given a shearing action.

N represents a jaw, which is pivoted to the projecting end of the arm C by means of a transverse bolt, O.

In one side of the jaw N is a longitudinal recess, P, in which is secured the upper blade or cutter, R, by means of bolts or screws S.

To the outer end of the casting A is pivoted the inner end of a hand-lever, P', and the said lever is connected to the free end of the jaw N by means of links U. By raising the free end of the hand-lever P' the free end of the jaw will be elevated, so as to open the blade R from the blade K, and by lowering the free end of the hand-lever the blade R will be caused to descend on one side of the upper edge of the blade K, and thereby cut or shear a plate or bar of metal placed between the said blades.

V represents a vertical opening which is made in the arm C directly above the center of the groove D. In this opening V is a vertically-movable plunger, W, the upper end of which is connected to the lever-jaw N by means of links X. The lower end of the plunger is provided with a vertical opening adapted to receive the upper end of a punch, Y, which corresponds to the die secured in the die-holder. When the lever-arm P' is lowered, the punch is caused to enter the opening in the die, and thereby a plate or bar of metal placed on the said die will have an opening made in it by the punch as the latter descends.

Having thus described my invention, I claim—

1. In a punching and shearing machine, the combination of the base or casting A, having the horizontal arm B, and the arm C above the arm B, the lever-jaw N, pivoted to the arm C, the blade R, secured to the lever-jaw, the lower blade, K, secured in the upper side of the arm C, the vertically-movable plunger W, connected to the lever-jaw near the pivotal end thereof and extending through an opening in the arm C, and the lever P', connected to the lever-jaw to operate the latter, substantially as described.

2. In a punching and shearing machine, the combination of the base or casting A, having the tapered groove I, the lower blade, K, to fit in the groove I, and the key L and block
5 M to secure the said blade in the groove I, substantially as described.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in presence of two witnesses.

CALEB CROTHERS.

Witnesses:

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J. F. AIGLER.