J. COWHIG.

Punching Machine.

No. 220,129. Patented Sept. 30, 1879.

Fig. 1

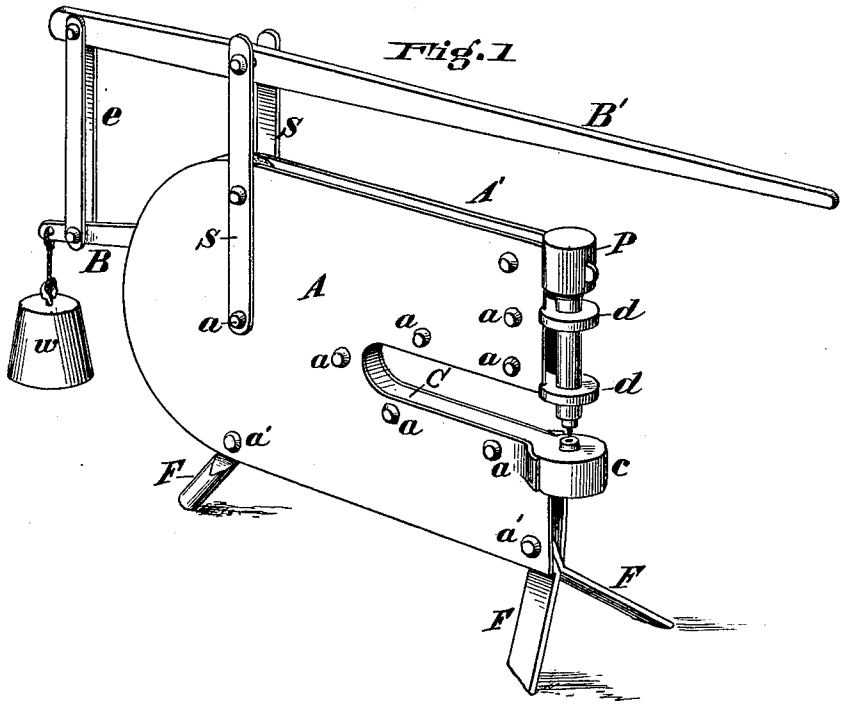
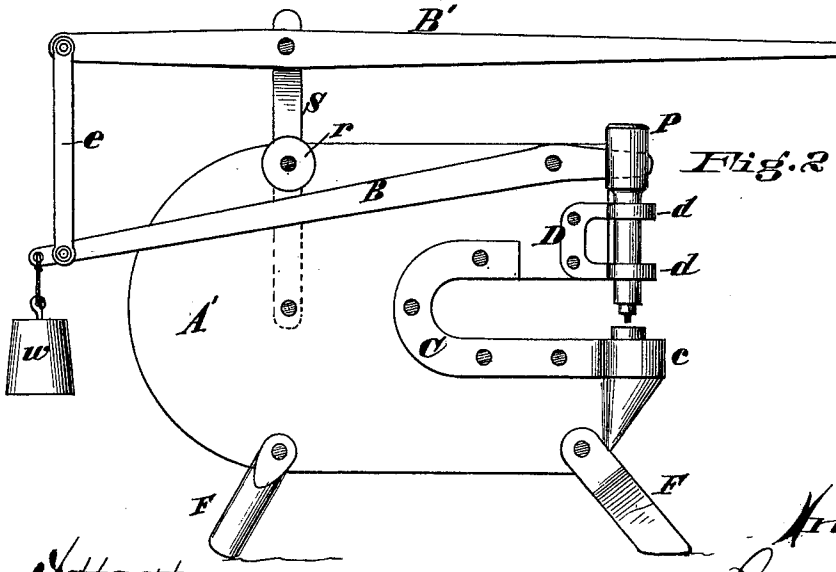



Fig. 2




Attest.

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# UNITED STATES PATENT OFFICE.

JERRY COWHIG, OF RICHMOND, INDIANA.

## IMPROVEMENT IN PUNCHING-MACHINES.

Specification forming part of Letters Patent No. **220,129**, dated September 30, 1879; application filed April 4, 1879.

*To all whom it may concern:*

Be it known that I, JERRY COWHIG, of Richmond, Wayne county, Indiana, have invented a new and useful Improvement in Punching-Machines, of which the following is full, clear, and exact description, reference being had to the drawings annexed to and forming part of this specification.

The object of my invention is to provide a punching-machine for sheet metal which shall possess the qualities of maximum efficiency and power with minimum cost of construction, and at the same time be of little weight and portable.

To this end my invention consists in a peculiar construction of the frame of the punch, whereby these objects are accomplished.

In the drawings herewith, Figure 1 represents my improved punching-machine in perspective; and Fig. 2, a side elevation of the same with the side plate removed.

Heretofore it has been the practice in constructing punching-machines intended to perforate boiler-iron or other similar material to construct the frame of cast-iron, which, in order to possess the requisite strength for the work, must be of great weight, and practically immovable when once placed in position for use, and also is expensive to construct, and when broken cannot be repaired.

I construct the frame of two U-shaped sides of sheet-iron, A A′, of sufficient size for the general purposes to which the machine is to be applied, which are united together by bolts or rivets *a*. The side pieces, A, are spaced sufficiently apart to permit the lever B to be pivoted and operate between them.

A brace, C, projecting in front of the lower jaw to form the die *c* or perforated support for the metal undergoing perforation, extends between the side plates flush with the edge of the lower jaw, and is curved around the rear of the opening, following its contour, and is suitably riveted or bolted in position, and aids also to strengthen the frame. Another curved piece, D, of similar thickness, is inserted between the side plates, having its projecting ends formed into guides *d* for the vertically-moving punch P.

The guides *d d* may be of separate pieces, secured in the upper jaw of the frame, instead of being parts of one piece of metal; and the brace C may be continued all the way around and extend beyond the lower jaw to form the die, and from the upper jaw to form one of the guides for the punch P.

The punch P is slotted in its head for the reception of the end of the lever B, by which it is operated.

The lever B extends rearward between the plates A A′, and is limited in its upward movement by a rubber washer inclosing the upper rivet securing the standards S, which carry the hand-lever B′.

The lever B′ is connected at its rear end by hangers or connecting-rods *e*, so that when the operator grasps and pulls down the forward end of lever B′ the rear end of lever B is elevated and its forward end depressed, carrying the punch downward into the perforated die.

A weight, *w*, hung to the rear end of lever B, overbalances the weight of the levers and keeps the system of levers always in position for use.

The frame is mounted upon feet F, secured between the side plates of the frame and extending beneath and laterally to give a lateral support. These are short bars of iron, cut and bent to the required form, and held between the sides of the frame by rivets *a′*.

The operation of the machine is sufficiently obvious without description.

The construction of the frame gives the utmost rigidity to resist vertical strains, together with the greatest economy of metal and labor of construction.

The machine is so far simplified that one capable of doing heavy work may be constructed by ordinary blacksmiths without the use of special tools, and is of such light weight as to be easily removable from place to place where needed for use.

The system of leverage may be altered as

may be desired without departing from the essential principle of my invention.

Having described my invention, what I claim and dseire to secure by Letters Patent, is—

A frame for a sheet-metal punch constituted of two similar plates, A A′, the brace C, carrying the die, and guides *d*, constructed substantially as shown, for the purpose specified.

In testimony whereof I have hereunto set my hand this 19th day of March, 1879.

JERRY COWHIG.

Witnesses:

L. M. HOSEA,

E. A. ELLSWORTH.