J. T. BEDFORD.

Metal Stamping, Shearing and Punching Machine.

No. 208,009. Patented Sept. 17, 1878.

Fig. 1

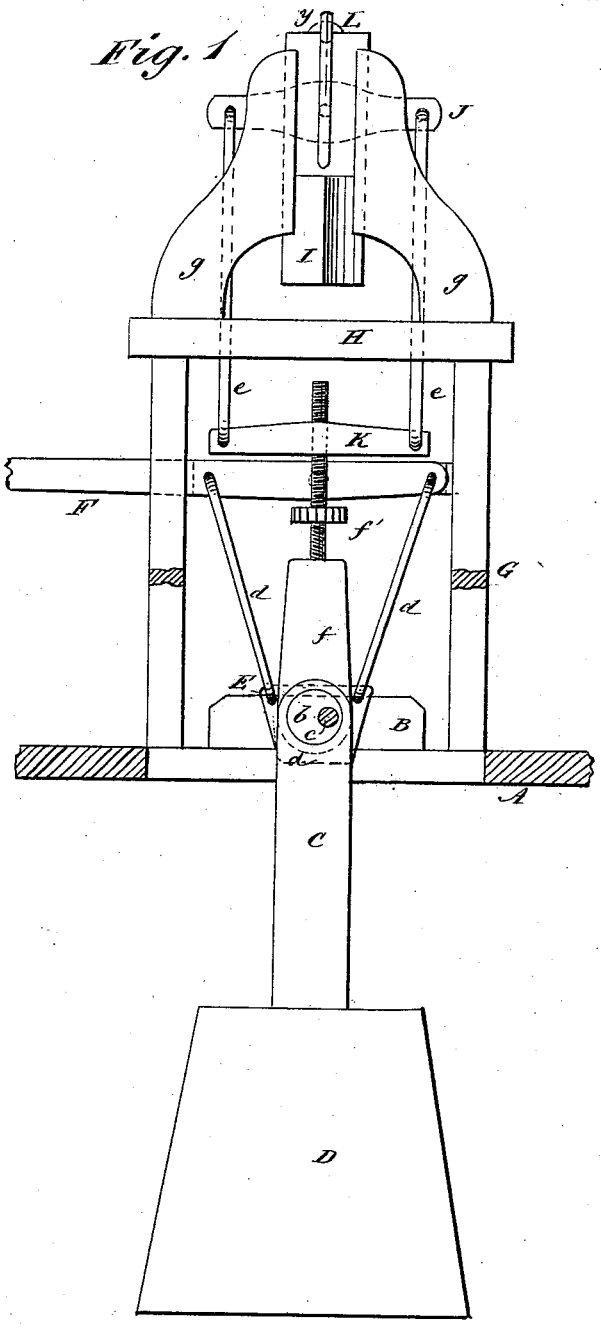
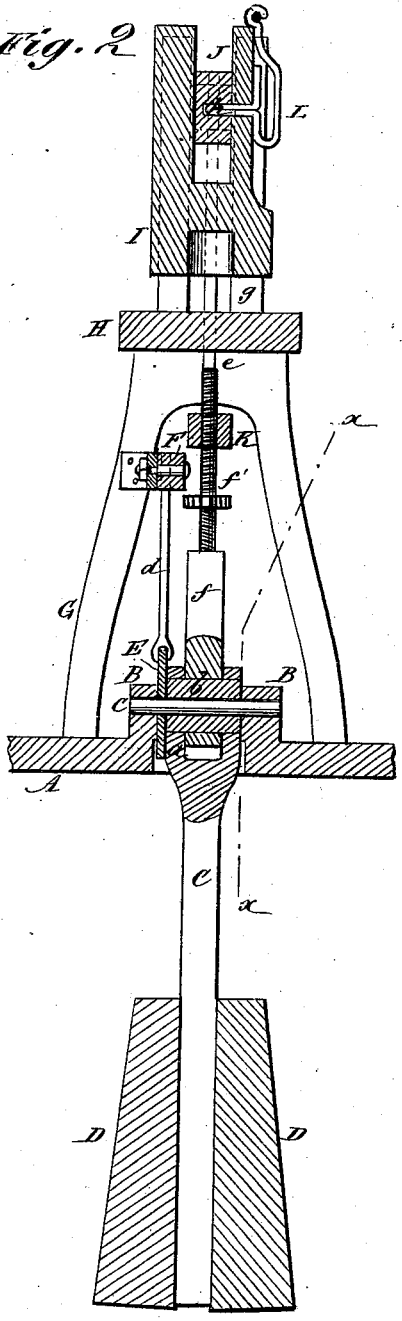


Fig. 2



WITNESSES:

C. Neveux

C. Sedgwick

INVENTOR:

J. T. Bedford

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH T. BEDFORD, OF NEW YORK, N. Y.

IMPROVEMENT IN METAL STAMPING, SHEARING, AND PUNCHING MACHINES.

Specification forming part of Letters Patent No. **208,009**, dated September 17, 1878; application filed January 19, 1878.

To all whom it may concern:

Be it known that I, JOSEPH T. BEDFORD, of the city, county, and State of New York, have invented a new and Improved Stamping, Shearing, and Punching Machine, of which the following is a specification:

Figure 1 is a front elevation of my improved machine, taken partly in section on line *x x* in Fig. 2. Fig. 2 is a vertical section taken on line *y y*, in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention consists in the combination of a hand-lever with a heavily-weighted lever or pendulum mounted on a pivot, and carrying an eccentric, whose rod is connected with the slide of a stamping, shearing, or punching machine.

The invention also consists in a novel device for stopping the action of the slide of the punching or stamping machine while the pendulum is permitted to oscillate.

The object of my invention is to provide a simple and powerful machine for stamping, shearing, and punching, which shall, with the expenditure of a small amount of power, perform the heavier kinds of work.

Referring to the drawing, A is the foundation or base-piece, upon which there are two ears, B, one at each side of an opening in the bed, that receives the upper bifurcated end, *a*, of the lever C, in which is secured an eccentric, *b*, whose pivot *c* is supported by the ears B. The axis of the eccentric is placed on a horizontal line drawn through its pivot, or is removed ninety degrees from the line of pressure.

To the lower end of the lever C a heavy weight, D, is secured. This weight may be made adjustable on the lever, when it may be moved nearer the pivot for light work.

A lever, E, is secured to the side of the lever C, which is connected by two links, *d*, with a hand-lever, F, that is fulcrumed on a cross-bar of the frame G. The frame G is mounted on the base-piece, and supports the bed H of the punching-machine centrally over the lever C.

Between two curved standards, *g*, that are secured to the bed H, the slide I is fitted. This slide and the curved standards are slotted to receive a bar, J, which is connected by rods *e* with a cross-bar, K, below the bed H.

On the eccentric *b* an eccentric-rod, *f*, is placed, which is connected by means of a right and left hand screw, *f'*, with the bar K, the end of the eccentric-rod and the bar being apertured and threaded for receiving the screw.

A hasp, L, is hinged to the upper part of the slide I, and is provided with a pin, *h*, which projects through an aperture in the slide into an aperture in the bar J when it is required to move the slide I, and when it is desired to oscillate the pendulum without moving the slide the pin *h* is withdrawn, when the bar J will move up or down in the slot.

The slide J and the bed H are provided with the usual devices for holding punches, shear-blades, or dies.

By turning the screw *f'* the distance between the upper and lower die may be varied. By moving the hand-lever up and down the pendulum is oscillated, and the slide I is moved up and down by the eccentric with great force, so that stamping or cutting, which were hitherto considered too heavy for hand machines, may be readily done by this improved machine.

I am aware that it is not broadly new to operate the working parts of metal punching and shearing machines by means of pendulous or weighted levers, and therefore desire to confine myself to the particular construction of parts hereinbefore described, which alone forms the subject of the present invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a punching or shearing machine, the combination of the weighted pendulous lever C D, eccentric cross-head *b*, lever E, links *d*, hand-lever F, and eccentric-rod *f* with the base-frame, having bearings for the eccentric cross-head, and a vertically-reciprocating punch or other tool, substantially as and for the purpose set forth.

2. The slide or tool-carrier I, having a vertical slot and a latch, L, and the bars J K and connecting-rods *e*, in combination with mechanism, substantially as described, for operating said tool-carrier or slide, as and for the purpose set forth.

JOSEPH T. BEDFORD.

Witnesses:
C. SEDGWICK,
GEO. M. HOPKINS.