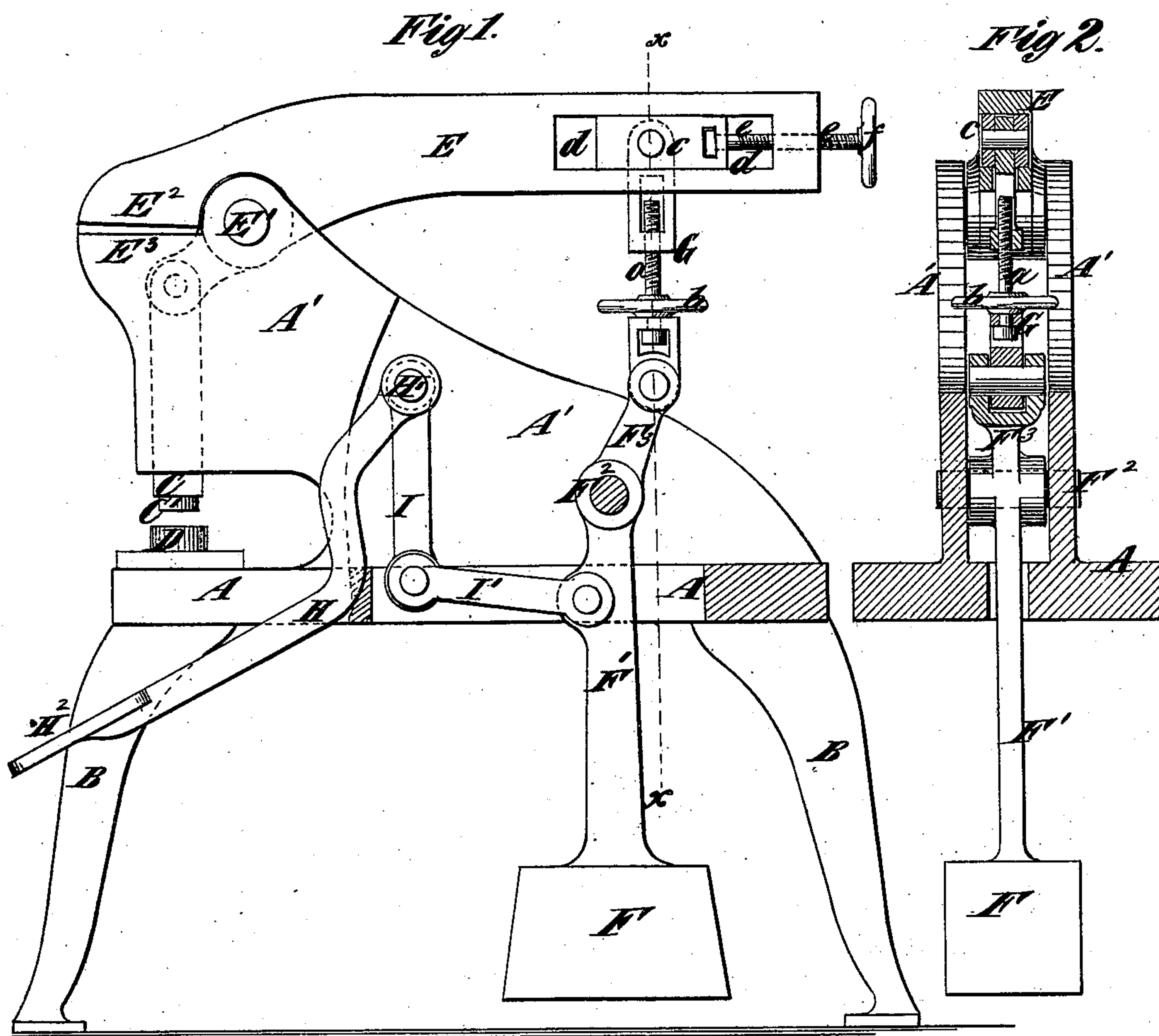


M. HERZBERG.
Metal Stamping, Punching and Shearing Machine.
No. 226,612. Patented April 20, 1880.



Witnesses:
Fred K. Haynes
Thomas E. Birch.

Inventor:
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by his attorneys
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UNITED STATES PATENT OFFICE.

MORITZ HERZBERG, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, MARY O'NEILL, AND HUGH O'NEILL, OF SAME PLACE.

METAL STAMPING, PUNCHING, AND SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 228,612, dated April 20, 1880.

Application filed July 25, 1879.

To all whom it may concern:

Be it known that I, MORITZ HERZBERG, of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Metal Stamping, Punching, and Shearing Machines, of which the following is a specification.

My invention relates to that class of presses and shears in which an oscillating pendulous weight or drop is employed, the said weight being oscillated in one direction by the hand or foot of an operator, and furnishing in its return movement the power by which the work is performed. Such presses, though useful for cutting articles of sheet metal, are particularly designed for stamping or embossing metal.

My invention consists in the combination, with such a press, of means for varying the amount of pressure exerted by the plunger or mandrel of the press, and also for accurately adjusting the amount of movement of said plunger or mandrel, and for changing the position which the plunger or mandrel occupies at any given point in the stroke, so as to accommodate dies or articles to be operated on of different thicknesses.

In the accompanying drawings, Figure 1 represents a side view of a combined press and shear embodying my invention, a portion of the said frame being broken away; and Fig. 2 represents a transverse section thereof on the dotted line *x x*, Fig. 1.

Similar letters of reference designate corresponding parts in both figures.

The frame-work of the press, as here represented, consists of a bed-plate, A, mounted upon legs B, and the upright side pieces, A', erected upon said bed-plate, and preferably cast in one piece therewith.

C designates the mandrel or plunger, and C' and D the punch and die by which the stamping or embossing is to be effected.

E designates the lever of the press, to which the mandrel or plunger C is attached and by which it is moved up and down. The said lever, like that of an ordinary press, is mounted on a fulcrum or pivot, E', upon which it may be oscillated vertically.

E² and E³ designate shear-blades, the former of which is movable, being formed by an ex-

tension of the lever E, and the latter of which is stationary.

F designates a pendulous weight attached to the end of the lever F', which is mounted on a pivot, F², carried in the frame-work of the press.

The arm F³ of the lever F' is connected, by means of a connection, G, with the lever E.

H designates a lever mounted on a pivot, H', and having formed upon the other end a treadle, H², in such a position that it may be conveniently reached by the foot of the operator. From the arm H motion is imparted, through the lever I and link I', to the lever F', and by forcing the treadle H' down the weight F is swung outward, drawing down the long arm of the lever E and raising the mandrel or plunger C sufficiently to permit the article to be stamped or embossed to be placed upon the die. When the foot is removed from the treadle the weight is released, and swinging downward raises the long arm of the lever E and forces down the mandrel of the press to act on the article beneath the punch C'. When the weight, in its return movement, passes the vertical line the punch is raised and the pressure exerted by it is diminished.

In order to regulate the amount of pressure exerted by the press, I have represented the connection as adjustable in the direction of its length.

The connection G is composed of two links united by a screw, *a*, upon which is mounted a hand-wheel, *b*. To effect the adjustment of the length of said connection the hand-wheel *b* may be turned, thereby increasing or diminishing the length thereof.

Instead of connecting the upper end of the link G directly to the lever E, I have represented it as connected to the block *c* fitting in a slot, *d*, and adapted to be adjusted horizontally therein and held in any position by means of a screw, *e*, fitted with a hand-wheel, *f*. By moving the block *c* to the left the long arm of the lever E is shortened and the stroke of the press, mandrel, or plunger increased, while by moving said block to the right the long arm of said lever is lengthened and the length of stroke of the mandrel or plunger diminished.

If desirable, the lever H, by which the weight

F is oscillated, might be arranged in a convenient position to be acted upon by the hand of the operator, and the weight F might be made adjustable on the lever F', so as to increase or diminish the power of the press.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the lever E, the weight F, and lever F', of the connection G, provided with a screw, *a*, whereby the length of said connection may be increased or diminished, substantially as specified.

2. The combination, with the lever of a press

or shear, of a block adjustable along the said lever, a pendulous oscillating weight, a lever upon which said weight is secured, and a connection connecting the last said lever with the adjustable block, substantially as specified.

3. The combination, with the slotted lever E, of the block *c*, screw *e*, connection G, and weighted lever F', substantially as specified.

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Witnesses:

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