(Model.)

J. WAGNER.

METAL WORKING PRESS.

No. 263,260. Patented Aug. 22, 1882.

Fig. 1

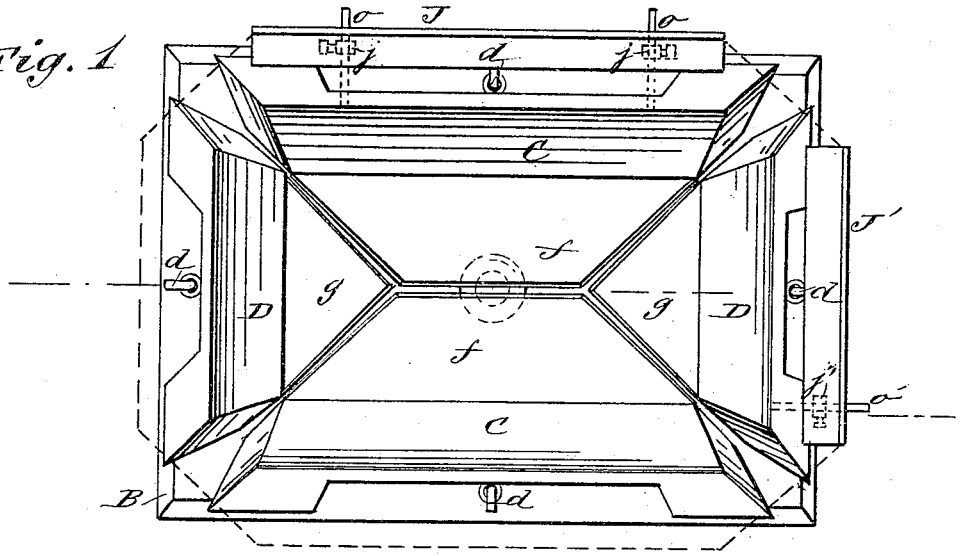


Fig. 2

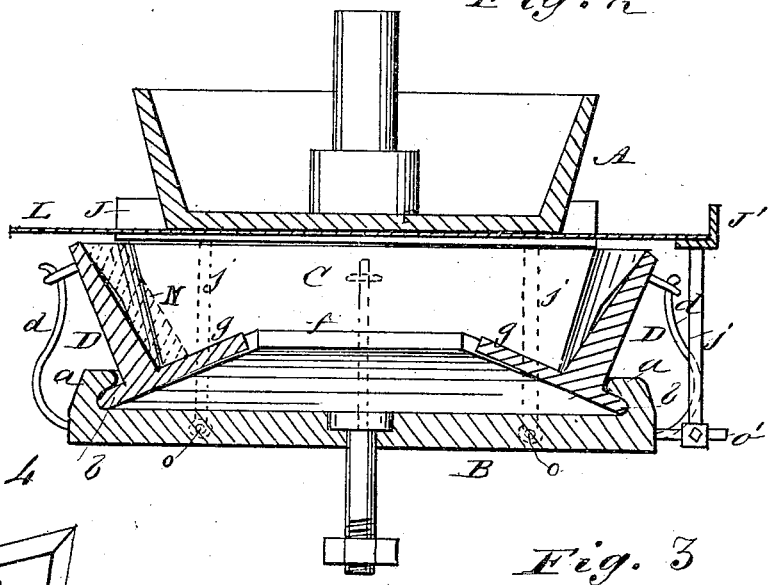
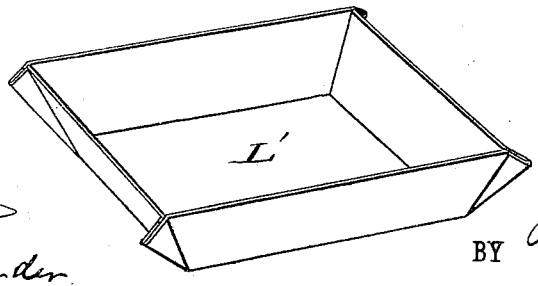


Fig. 4

Fig. 3



WITNESSES:

C. Neveux

N. B. Magruder

INVENTOR:

J. Wagner

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN WAGNER, OF BOSTON, MASSACHUSETTS.

METAL-WORKING PRESS.

SPECIFICATION forming part of Letters Patent No. 263,260, dated August 22, 1882.

Application filed May 21, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOHN WAGNER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Metal-Working Press, of which the following is a full, clear, and exact description.

My invention relates to that class of presses that are composed of a reciprocating plunger and die for bending or folding blanks of sheet metal into form; and my invention consists in the combination and arrangement of parts hereinafter fully described and set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the die, the plunger being removed. Fig. 2 is a sectional elevation of the plunger and die, showing a blank in place upon the supporting-guides, ready to be pressed. Fig. 3 is a perspective view of the blank after being pressed, and Fig. 4 is a perspective view of one of the removable face-plates for the die.

A represents the plunger, which may be of any desired form and may be operated in the usual manner.

The die is composed of the base-plate B and the side sections, C C, and end sections, D D. The base-plate B is formed with the undercut flange *a*, and the said sections C D are formed with lips *b*, which fit under the flange *a*, as shown in Fig. 2, in such manner that the vertical portion of the sections is adapted to have a rocking or reciprocating movement to and from the plunger as the same is lowered and raised. By this construction an extremely strong and durable hinge-joint is formed between the dies C D *f g* and the plate B *a*. The gathering of scale and dirt which usually accumulates in such joints, endangering the breaking of common hinges, does no damage to this, and the dies may be instantly taken out without moving a screw or bolt, which is a great advantage in changing dies for different forms of work. When the plunger is raised the sections are held back to the position shown in Fig. 2 by means of the springs *d d*, attached to the base-plate. The sections are automatically brought forward toward the plunger by the action of the plunger upon them as the plunger is forced down to the bottom of the die, and for this purpose I form the side sections at the bottom with the inwardly-projecting flanges or plates *f*, and the end sections at the bottom with the inwardly-projecting flanges or plates *g*. These plates *f* and *g*, when the sections C and D are held back by the springs *d*, are raised from the base B and stand in an inclined position, as shown clearly in Fig. 2, and when the plunger comes against them they act as levers to the vertical portions of the sections, and cause the vertical portions to forcibly approach the plungers and bend up the sides of the blank. These flanges *f* and *g* are made so as to form a complete floor for the die at the time the plunger reaches its lowest point, as will be clearly understood from Fig. 1.

J J′ represent the supporting-guides for the blank L. These guides are L-shaped in cross-section, and the guide J is provided with the rods *j j*, (shown in dotted lines in Figs. 1 and 2,) which fit at their lower ends upon the horizontal rods *o o* of the base B in such manner that the guide is adjustable upon the rods to and from the base B to suit blanks of different sizes. The guide J′ is provided with but one rod, *j′*, (though two or more might be used, if desired,) which fits upon the horizontal rod *o′* of the base B in such manner that it also is adapted to be moved thereon to and from the edge of the base to suit the guide to blanks of different sizes.

In use, the guides having been properly adjusted to suit the plain blanks to be pressed and folded and the plunger raised, the blank to be pressed is to be placed under the plunger upon the guides J J′, as shown at L in Fig. 2 and in dotted lines in Fig. 1. When the plunger descends the blank will at first be simply bent or forced down into the die until the under side of the blank strikes the edges of the plates *f* and *g*, whereupon the side walls of the die will be made to forcibly approach the sides of the plunger, and thus bend and fold the sides of the blank up into form, as shown at L′ in Fig. 3. When the plunger is raised the springs *d d* will throw the sections C and D back, and cause the plates *f* and *g* to elevate the formed blank, so that it may be readily taken out of the die. The formed blank being removed from the die, the die is ready for another plain blank upon which to repeat the operation.

In order to fit the die for making forms of different sizes, I provide the blocks or plates N, (shown in Fig. 4,) which are adapted to be placed inside of the vertical portions of the sections C or D, as shown in dotted lines in Fig. 2. There will be as many sets of these blocks or plates N as desired, according to the number of forms desired.

By this construction of the machine less power is required to press and fold the blanks than with machines of the ordinary construction, and a more perfect form is made, since at the corners the sections approach each other as well as the plunger, and pinch in the blanks and make the corners square and perfect. Besides these advantages the machine is comparatively cheap, rapid in operation, and durable, and does not require an experienced hand to attend it.

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

1. In a sheet-metal-working press, the combination, with the plunger A, of the side and bottom sections D *g* C *f*, provided with the semi-cylindrical lips *b*, and the base-plate B, provided with the inwardly-projecting flanges *a*, forming recesses beneath them fitting the edges of the lips *b*, as shown and described.

2. The combination, with the plunger A, side sections, D C *f g*, and bed-plate B, of the L-shaped guide-supports J J′, adjustably secured to the base-plate B for supporting the plate in exact position free from the side sections, as shown and described.

3. The combination, with the hinged sections C D, of the removable plates or blocks N, substantially as and for the purposes set forth.

4. The base-plate B, provided with the rods *o o′*, in combination with the guides J J′, provided with the rods *j j′*, adapted to fit at their lower ends upon the rods *o o′*, as and for the purposes set forth.

JOHN WAGNER.

Witnesses:
LUCAS SMITH,
JAMES W. LOTHROP.