

(No Model.)

2 Sheets—Sheet 2.

E. J. DOLAN.

PRESS FOR STAMPING SHEET METAL.

No. 269,567.

Patented Dec. 26, 1882.

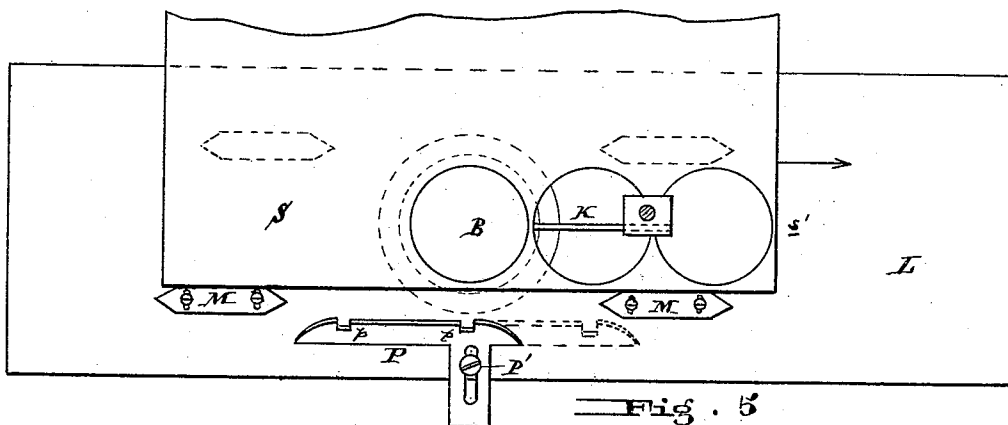


Fig. 5

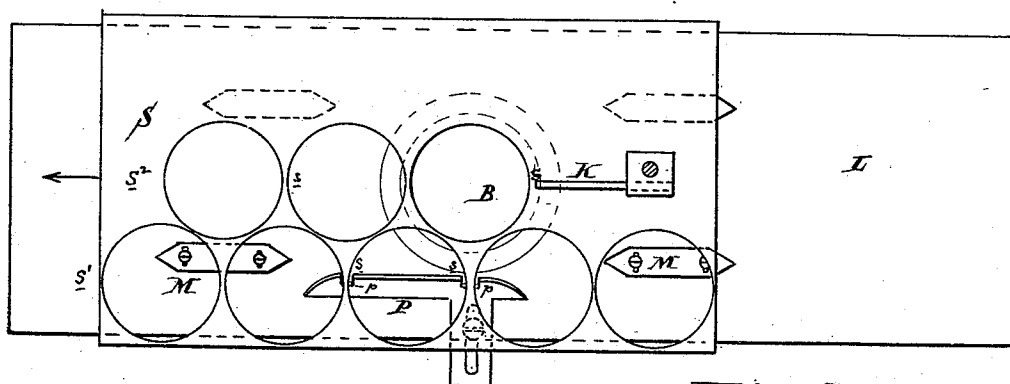


Fig. 6

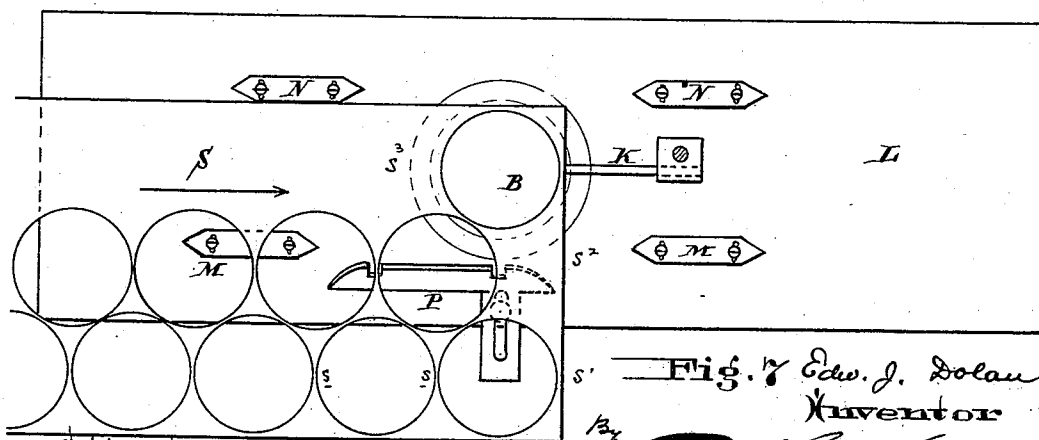


Fig. 7 E. J. Dolan
Inventor

Attest
J. J. Matz
Notary

By *Wm. H. M.*
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UNITED STATES PATENT OFFICE.

EDWARD J. DOLAN, OF PHILADELPHIA, PENNSYLVANIA.

PRESS FOR STAMPING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 269,567, dated December 26, 1882.

Application filed October 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. DOLAN, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Presses for Stamping Sheet Metal, of which the following is a specification.

My invention has reference to presses adapted to stamp or cut sheet-metal disks, &c., from sheets of metal; and it consists in a novel construction of registering devices, whereby the sheet may be fed to the dies and a maximum number of pieces stamped or cut therefrom without unnecessary waste of metal or ruination of a single piece, which was formerly the result from uncertain registration, all of which is more fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

Heretofore in presses adapted to stamp disks from sheet metal for the manufacture of tins, &c., the said sheets were fed to the dies by hand, and the registration was entirely guess-work, the result of which was that in many instances the stamped disks, &c., were spoiled, owing to portions cut out by previous stamping, and less than the maximum number of disks were cut from a given sheet. These defects were very objectionable, as there was a loss of time and material involved.

The object of my invention is to so construct the stamping-press that perfect hand-registration can readily be effected, so that a maximum number of disks may be cut from a given sheet, and that without any liability to spoil even a single one of said disks, &c. My object is also to reduce the time required to stamp a given number of disks, &c., and also to save metal.

In the drawings, Figure 1 is a perspective view of a press embodying my improvements. Fig. 2 is a vertical section through the stamping-dies and shows the automatic registering device in elevation. Fig. 3 is a side elevation, with part in section, of the actuating mechanism for the automatic registering device. Fig. 4 is an enlarged view of a portion of Fig. 2. Fig. 5 is a plan view of the table, and shows method of registration when cutting the first row of disks. Fig. 6 is a similar view, but shows the method of registration for the second or middle row of disks; and Fig. 7 is a similar view, but shows the method of registration for the third row of disks.

A is the frame of the machine.

B is the female cutting-die, and C is the male cutting die, the latter of which is reciprocated vertically by lever O and pedal R, or other equivalent and well-known device.

D is the sheet-metal clamp, and encircles the die C, and is prevented from descending too far by flange *d* or its equivalent. This clamp D is pressed downward by springs E, and when the die C is raised the clamp D projects slightly below the cutting-edge of said die, so that as they both descend the clamp, which is in advance, will first clamp and hold the sheet metal, and then the die will stamp the disk from the said sheet metal.

Secured to the frame of the machine is a support, H, which is adjustably secured to said frame by bolts *h*. This support H carries at its bottom the automatic registering device, which consists of the flat plate K, set on edge and adjustably secured to head J on the bottom of the vertical rod J', which works in a bearing in said support and is provided at the top with an arm, I, which slides in a slot, I', the upper surface of which arm is curved to allow easy passage to the descending spring-finger which operates it.

Secured to the operating-shaft of the male die C, by bolt *f* or other suitable device, is the clamp F, which is provided with an arm, F', to which is secured the spring-finger G, provided with a catch, *g*, at the bottom, and at or about its middle with a cam-block, G', which works in connection with a cam, H', on support H, as shown in Fig. 3.

The plate L encircles the female die B and carries the guides M and N, which are made adjustable by screws *m* and guide or register P, provided with notches *p* upon its upper edge, and made adjustable by a bolt and slot, P'. This guide P is arranged between the guides M and in front of the dies. In the rear of the plate or table L, and secured thereto and back of the guides N, is a support, L', which is adapted to hold the tin plate to be cut clear of the guides N when row No. 1 is being cut, as shown in Fig. 5.

The operation is as follows: The tin sheet S being of the requisite size is pressed against guides M until its end or side is perforated. It is then placed over both guides M and N until the middle row is cut, and then placed

against the guides N until the last or other side row is cut. The edge of the sheet S being pressed against the guide M it is shoved to the right until arrested by the register-plate K, which is resting upon the female die B, its end being a very small thickness, *s*, from the cutting-edge. The pedal R is then pressed down, causing the clamp D to descend and clamp the tin, and the male die C then cuts out disk T. During this downward movement of die C, the catch *g* of the spring-finger G passes below the arm I of the plate K. Now, as the die C rises the register-plate K is also raised, and immediately thereafter the clamp D also rises. The plate is then pushed along farther to the right, but while in the act of moving said plate the cam-block G' comes in contact with block or cam H', and frees the arm I of the plate K, which latter falls in time to catch the left-hand side of the hole made in cutting out the disk, and so on until row *s'* is cut across the sheet. The width of metal *s*, which is left between the ends and between any two adjacent holes being equal to the distance of the end of plate K from the edge of die B, and this can be regulated by screws and slots *k*. In cutting the second or *s*² row of disks, the tin plate S is laid upon both sets of guides M N and moved to the left until the first two thin portions *s* of metal fall into the slots or notches *p p* in guide-plate P. In this case the plate K plays no part and need not be considered. After cutting out the *s*² row of disks, the sheet S is then drawn over until its farthest edge rest against guides N, and it is moved in the same direction as in the first instance—viz, to the right—and the registration is governed by the plate K once more. In the drawings the plate is shown as stamped zigzag, but moving the guide P more to the right they may be cut with centers at right angles.

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

1. In a sheet-metal-stamping press for cutting disks, a female die, in combination with a male die, means to reciprocate said male die, an automatic registering device and mechanism to raise it with the said male die and allow it

to fall before said die is fully raised, to enable the sheet metal to be passed under said registering device without obstruction, substantially as and for the purpose specified.

2. In a sheet-metal-stamping press for cutting disks, a female die and a male die, in combination with means to reciprocate said male die, an automatic registering device, and mechanism to raise it with said male die and allow it to fall before said die is fully raised, to enable the sheet metal to be passed under said registering device without obstruction, and rigid guides arranged upon the feed-table and adapted to guide the metal to said registering device in a straight line, substantially as and for the purpose specified.

3. In a sheet-metal-stamping press for cutting disks, the combination of female die B, male die C, means to actuate said male die, and guide or register P, provided with notches *p*, and means to adjust it upon its support, substantially as and for the purpose specified.

4. In a press for cutting sheet-metal disks, the combination of dies B and C, table L, guides M and N, register-plate K, provided with a catch or arm, I, reciprocating catch-finger G, provided with catch *g*, and cam-block G', support H, provided with cam H', and means to reciprocate said finger G and die C, substantially as and for the purpose specified.

5. In a press for cutting sheet-metal disks, the combination of female die B, male die C means to reciprocate said male die, table L, guides M and N, register P, provided with notches *p*, and intermittently vertically-reciprocating register-plate K, substantially as and for the purpose specified.

6. In a press for cutting sheet-metal disks, the combination of female die B, male die C, means to reciprocate said male die, clamp D, having slot D', springs E, and vertically intermittently reciprocating plate K, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

EDWARD JAMES DOLAN.

Witnesses:

R. S. CHILD, Jr.,

R. A. CAVIN.