G. ZENDER.

Improvement in Machines for Punching Metal.

No. 123,435. Patented Feb. 6, 1872.

Fig. 1.

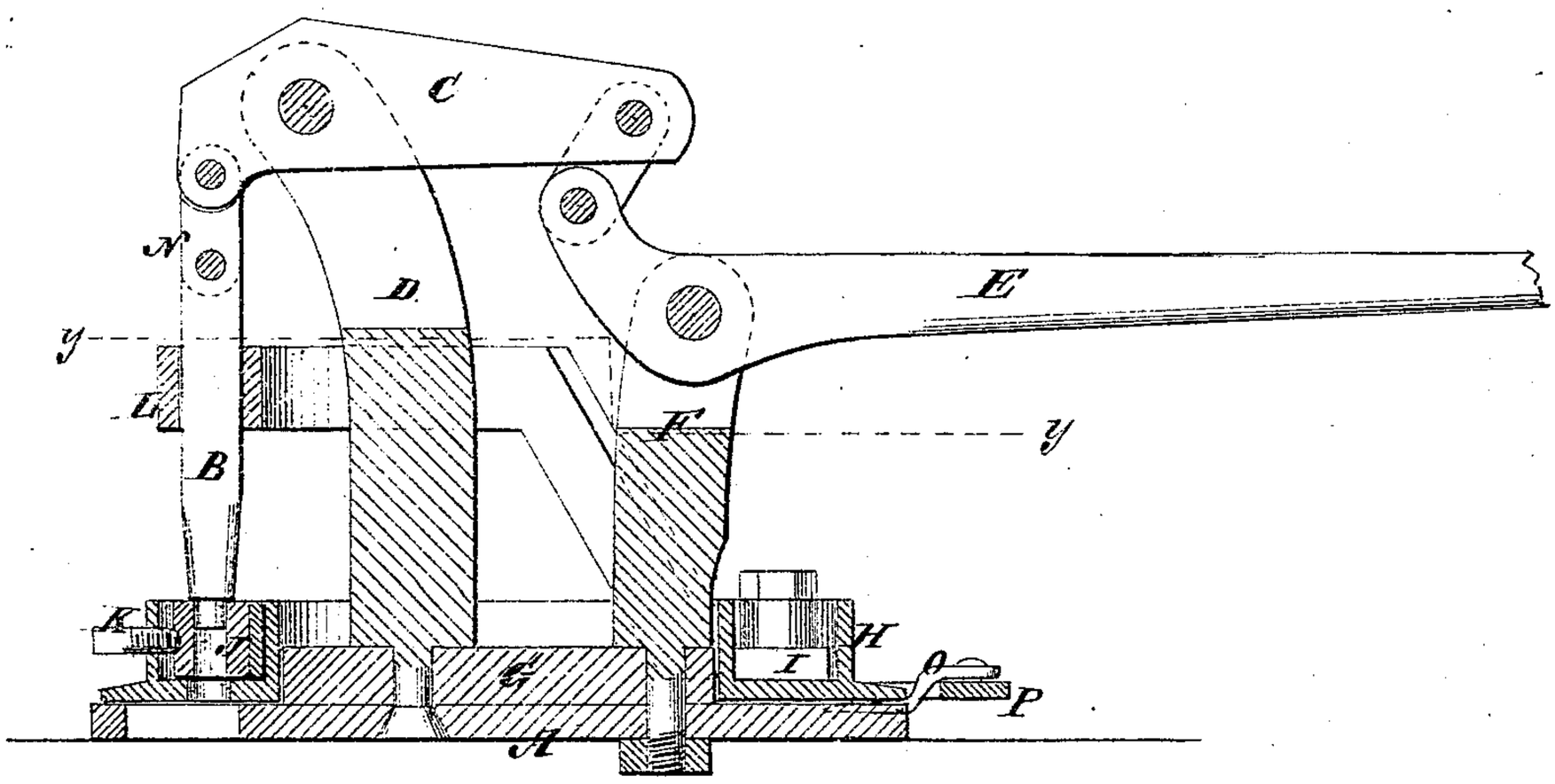
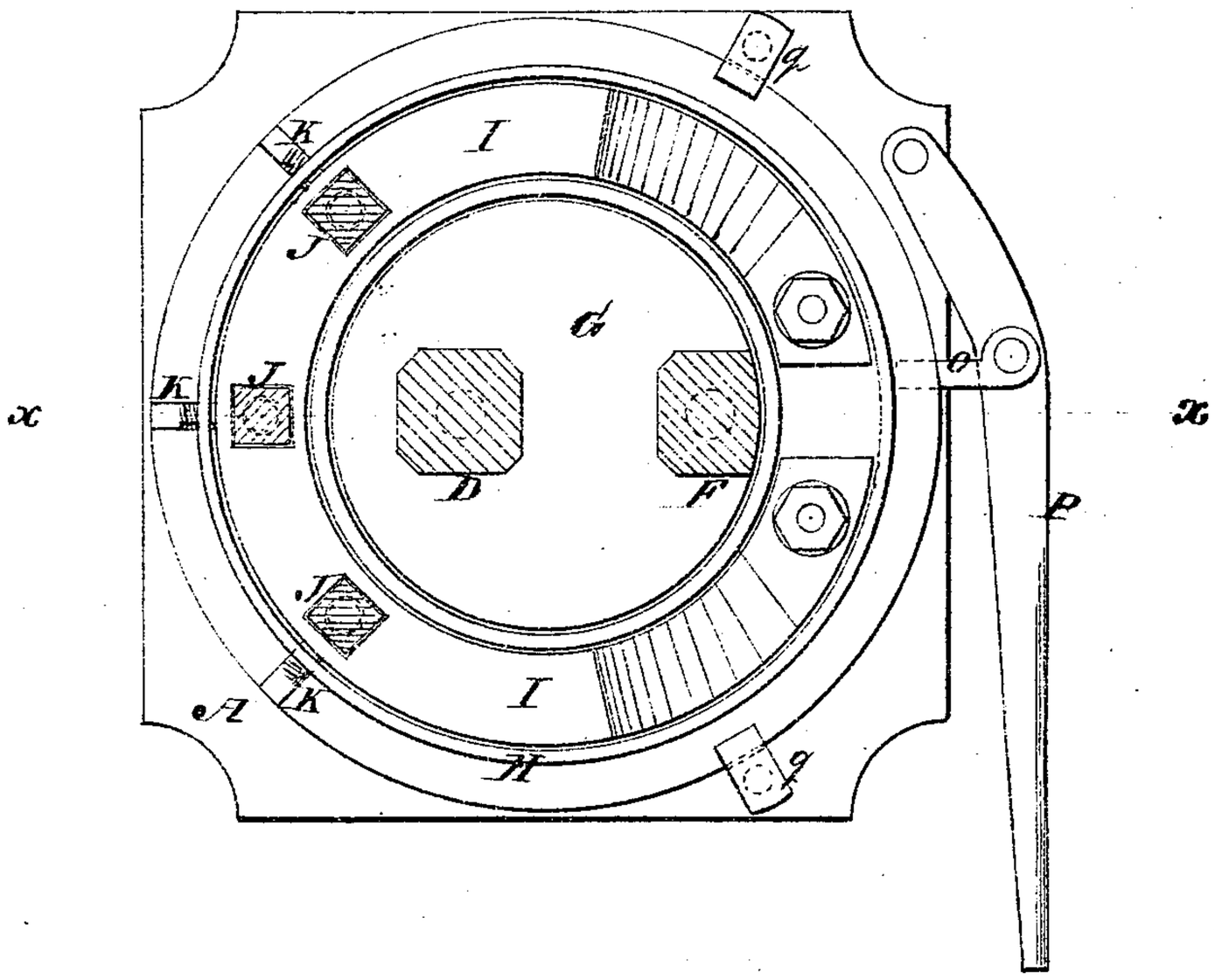


Fig. 2.



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UNITED STATES PATENT OFFICE.

GASPAR ZENDER, OF CALEDONIA, MINNESOTA.

IMPROVEMENT IN MACHINES FOR PUNCHING METALS.

Specification forming part of Letters Patent No. 123,435, dated February 6, 1872.

To all whom it may concern:

Be it known that I, GASPAR ZENDER, of Caledonia, in the county of Houston and State of Minnesota, have invented a new and useful Improvement in Adjustable Punch; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention will first be fully described and subsequently pointed out in the claim.

In the accompanying drawing, Figure 1 represents a vertical section of the punch, taken on the line *x x* of Fig. 2. Fig. 2 is a horizontal section looking down from the line *y y* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A is the bed-plate, which is fastened to the bench or table. B is the punch. C is the punch-lever, having its fulcrum on the stand D, which latter is rigidly attached to the bed-plate A, as seen in Fig. 1. E is the working-lever, whose fulcrum is on the stand F, which stand also passes through and is rigidly attached to the bed-plate A. G is a circular center-plate, firmly attached to the bed-plate and forming a portion thereof. H is an annular-chambered die-ring, which rests upon the bed-plate A, and fits onto the plate G, so as to revolve around it. I is the die-chamber of this ring. J represents the dies more or less in number, and of different sizes or forms, if desired, which are fastened in the chamber I by means of set-screws K, or in any other suitable manner. L is the punch-guide, which is semicircular in form where the punch apertures are made, and raised from the dies, as seen in Fig. 1, with its ends bent down into the chamber I, where they are confined by bolts in such a manner as to firmly support it in the position seen. A punch is provided for each die in case the latter vary in size or shape. The punch is connected with its lever C by the straps N, and the two levers C and E are connected in the same manner. The punch is fastened to the straps N by a screw, and is readily detached when a different punch is required. When this is done the die-ring H is turned on the bed so as to bring the required die directly beneath the punch. When the die-ring is thus placed, it may be held in position in any suitable manner.

In this example of my invention, I use a wedge, O, attached to and operated by the lever P. The die-ring is held down in the bed A by the clip-plates *q q*, but there is a slight depression in the top of the bed-plate, which allows the wedge O to be inserted. A slight pull on the lever P will suffice to hold the ring immovable while the punch and die are being used by the friction thus produced.

By this arrangement holes of various sizes and shapes may be punched with a single machine without removing the dies. The advantages of this arrangement will be readily understood by all who are acquainted with the subject.

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

The lever P, provided with pivoted wedge O, in combination with plate A and ring H, as and for the purpose described.

GASPAR ZENDER.

Witnesses:

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