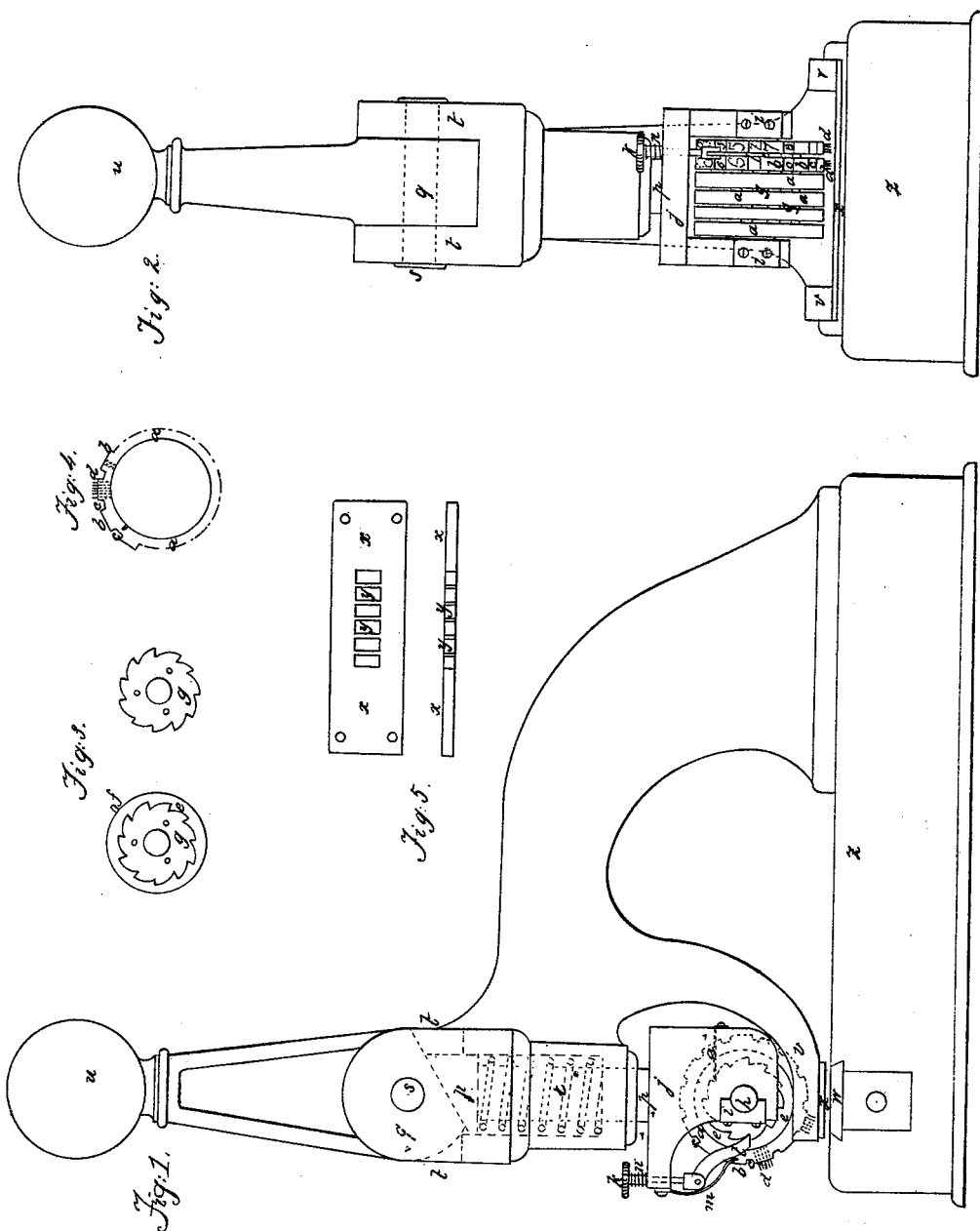


H. L. POIRIER.
Perforating-Stamp.

No. 218,312.

Patented Aug. 5, 1879.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRI L. POIRIER, OF PARIS, FRANCE.

IMPROVEMENT IN PERFORATING-STAMPS.

Specification forming part of Letters Patent No. **218,312**, dated August 5, 1879; application filed April 25, 1879; patented in France, June 19, 1878.

To all whom it may concern:

Be it known that I, HENRI LAURENT POIRIER, of Paris, France, have invented Improvements in Apparatus or Machines for Producing Words and other Characters in Perforations in Paper or Similar Material; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheet of drawings, making a part of the same.

My invention relates to an improved machine for perforating papers, so that letters, numbers, or other characters may be represented thereon by a series of perforations.

The invention consists in the construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of the machine, and Fig. 2 is a front view of the same. Fig. 3 shows detached a ratchet-wheel which transmits a rotary motion to a circular punch-holder, and this ratchet-wheel, which is pinned to a solid disk, is designed to fit into a circular opening in the said punch-holder. Fig. 4 is a side view of an annular detachable punch-holder, showing the manner in which the perforating-punches are fixed upon its periphery. Fig. 5 shows in plan and in longitudinal vertical section the counterpart provided with as many apertures as the apparatus has punch-holders.

The punch-holders are formed with an annular rim, *a*, bored cylindrically inside, and provided on the outside with prismatic projections *b*, separated by channels *c*. These projecting portions are pierced with small holes, within which are placed the punches *d*, which are of equal length and project outward. The rear portion of the punches is furnished with a head, which prevents them from falling out. In each prism *b* the punches are so arranged as to represent the series of ten figures, also the twenty-six letters of the alphabet and various signs, this arrangement permitting the operator to compose numbers, words, hieroglyphics, or other signs.

e is a solid disk, which is placed in the circular space within the punch-holder *a*. It is furnished on its periphery with a small key or stud, *f*, which serves to unite the two pieces, and on the disk *e* is pinned a ratchet-wheel, *g*.

It will be seen that with a punch-holder so constructed the punches may be readily replaced when they are worn, and also that they may be grouped in the prisms so as to change the characters to be reproduced in perforations.

Any number of these punch-holders may be employed, and they are placed side by side on a shaft, *h*, the two ends of which rest in bearings *i*, attached to a supporting-piece, *j*. *k* is a push-rod for operating the punch-holders *a*, and there are as many push-rods as holders. These push-rods have at one end a finger, *l*, which is kept in contact with the teeth of each ratchet-wheel by a spring, *m*. The push-rod piston is surrounded between its head and the upper surface of the supporting-piece *j* by a spiral spring, *n*, which causes it to ascend when pressure is removed. Every time a piston is pressed the corresponding punch-holder advances one tooth. Flat springs *o*, fixed to the rear portion of the supporting-piece *j*, form stopping-pawls for each ratchet-wheel. There are the same number of springs as holders.

It will be seen that each holder may be separately controlled, and thus composing may be effected.

p is a piston connected with the supporting-piece *j*, and which slides in a hollow part of the front portion of the frame of the apparatus, being actuated by a cam, which acts upon an inclined plane forming the upper face of the last-named piston. A spiral spring, *r*, which surrounds the piston, raises the latter when the cam is brought to its first position. It has for this purpose its point of support upon an interior projection provided at the foot of the piece in which the piston slides.

s is the spindle of the cam *q*. *t* is a support for the spindle *s*, and forms part of the frame. *u* is a handle for operating the cam. *v* represents front lateral arms of the frame, and supported by the fixed counterpart *z*, provided with as many apertures *y* as there are punch-holders, and which serve as guides for the prisms carrying the fixed punches. *z* is a table connected with the frame. It has below the counterpart a matrix, *w*, formed of a kind of grating, between the bars of which the punches penetrate. Upon this matrix is placed the sheet of paper which is to be perforated, and it is sufficient, after having composed the

formula to be reproduced in perforations, to press down the lever, which will cause the aforesaid supporting-piece with the punch-holders to descend, and the punches will pierce the paper, and passing through into the grating of the matrix, the desired perforations will have been made with one single stroke.

What I claim is—

1. In a perforating-stamp, the combination, with the cylinder *e*, of the detachable annular punch-holders *a*, having perforated prisms *b*, all as shown and described.

2. In a perforating-stamp, the combination, with the cylinder *e*, the punch-holders *a*, and ratchets *g*, of the vertically-sliding spring push-rods *k*, spring-fingers *l*, hinged thereto, and the support *j*, attached to the sliding piston, and having vertical bearings to receive and support the push-rods, all as shown and described.

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Witnesses:

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