J. B. SEXTON.

Punching-Machine.

No. 160,474. Patented March 2, 1875.

Fig 1

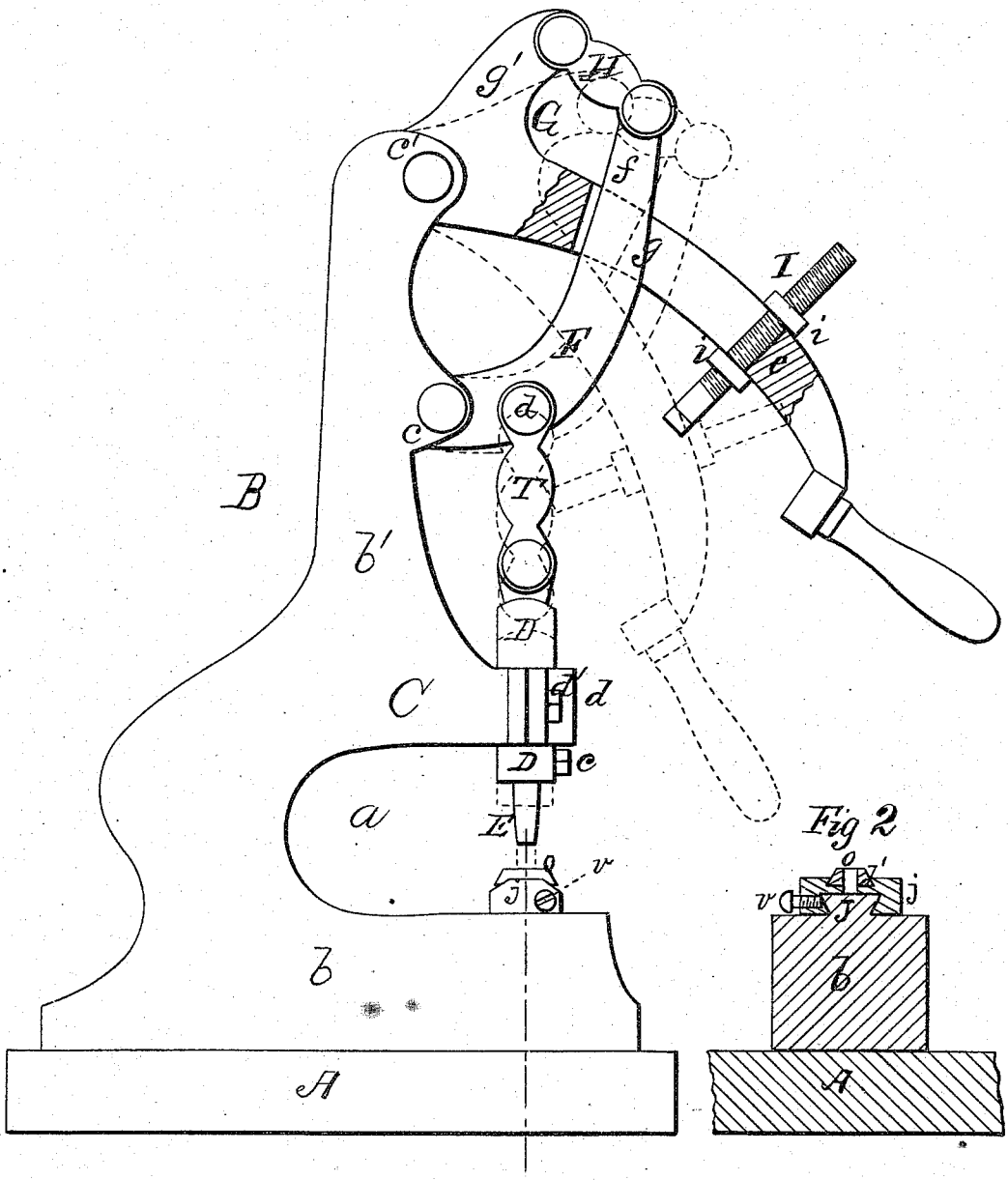


Fig 2




Witnesses.
Mary S. Utley.
Frank. J. Clasi

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# UNITED STATES PATENT OFFICE.

JAMES B. SEXTON, OF PELLA, IOWA.

## IMPROVEMENT IN PUNCHING-MACHINES.

Specification forming part of Letters Patent No. **160,474**, dated March 2, 1875; application filed November 7, 1874.

*To all whom it may concern:*

Be it known that I, JAMES B. SEXTON, of Pella, in the county of Marion and State of Iowa, have invented a new and valuable Improvement in Hand-Punches; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my punch, and Fig. 2 is a detail in section.

This invention has relation to punches which are especially adapted to making perforations in metals; and the nature of the invention consists in the combination, with a vertically movable die-holder having its bearings in a projecting arm of the punch-frame, of an arm pivoted to the said die-holder, and to a vertically-vibrating lever, having is fulcrum on the said frame, and passing through a slot in the power-arm of an angular actuating-lever, to the weight-arm of which it is pivotally connected by a link, whereby the said die-holder will be positively guided in a vertical course by the actuation of the main lever, and a great increase of power obtained from a given motor.

In the annexed drawings, A designates a stand, upon which is securely mounted the frame B of my improved punch. This frame consists of a horizontal portion, *b*, upon which is erected an upright portion, *b'*, in such a manner as to leave a cavity, *a*, between the base and the under side of the upright *b'*, as shown in Fig. 1. This upright has a projecting arm, C, and lugs *c c'*, which serve a purpose hereinafter to be explained. D indicates a vertically-movable die-holder, preferably of cylindrical form, having its bearings in the arm C of the upright *b'*, into which it is removably applied by means of a cap, *d*, and suitable screws *d'*. The lower end of this die-holder is tubular, for the purpose of allowing a die, E, to be inserted into it, which is there firmly secured by means of a set-screw, *c*. Its upper end is provided with an eye, by means of which an arm, T, pivotally attached, at *d*, to a vertically-vibrating lever, F, having its fulcrum in the lugs *c* of the upright *b'*, is pivoted to it. G designates an angular lever, having a long power-arm, *g*, and a short weight-arm, *g'*, having its angular part pivoted, in any suitable manner, to the lugs *c'* of upright *b'*. It has also a vertical slot, *e*, in its power-arm, through which the power-arm *f* of lever F is passed, and in which the said lever vibrates freely. H designates a short link, which is pivoted to the power end of lever F, and to the weight-arm *g'* of lever G, connecting the two, and allowing the power applied to the latter to be communicated to the former, thus depressing the plunger D when the power end of lever G is depressed, and elevating it when the said end is raised. I designates a stop, which is adjustable in the slot *e* of lever G by means of nuts *i i*, which are applied above and below the said lever. This adjustability is for the purpose of regulating the depth of penetration of the die in accordance with the thickness of the metal to be operated upon, and the end of the said stop will abut against the arm T, as shown in dotted lines, Fig. 1, when the lever G is actuated downward, thereby arresting its progress, and preventing undue penetration of the die, which would cause it to be jammed into the perforation, rendering its extrication tedious and occasioning loss of time.

J designates a longitudinally-beveled piece of metal, which is rigidly secured upon or cast with the upper rectilinear surface of the base *b* of the press-frame, upon which is passed a die-plate, *j*, having a correspondingly-beveled recess upon its lower surface, the said die-plate being adjustably held in place by means of a set-screw, *v*. The upper surface of this die-plate has a groove, *j'*, into which is passed a correspondingly-shaped capping of steel, *o*, in which is a perforation, registering with a similar perforation of the die-plate proper.

The object of rendering the die-plate adjustable is that the die may be capable of entering its perforation at all times and under all circumstances, preventing, in this manner, the breaking of the die, injury to die-plate, and

disfiguration and breaking of the metal operated on.

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

The combination, substantially as described, of the lever G, link H, lever F, arm T, die-holder D, and frame B, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES B. SEXTON.

Witnesses:
A. H. BETZER,
F. M. SEXTON.