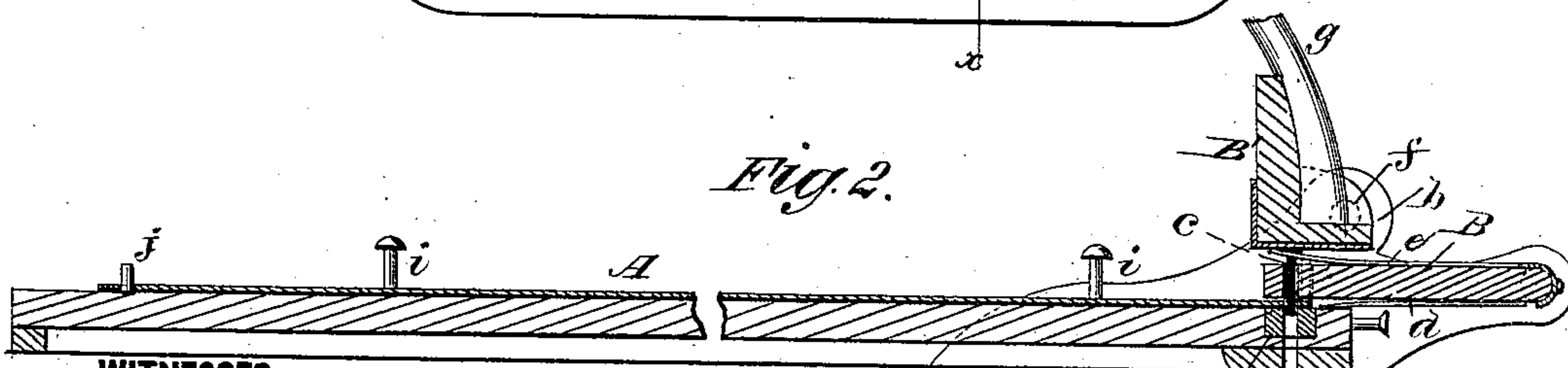
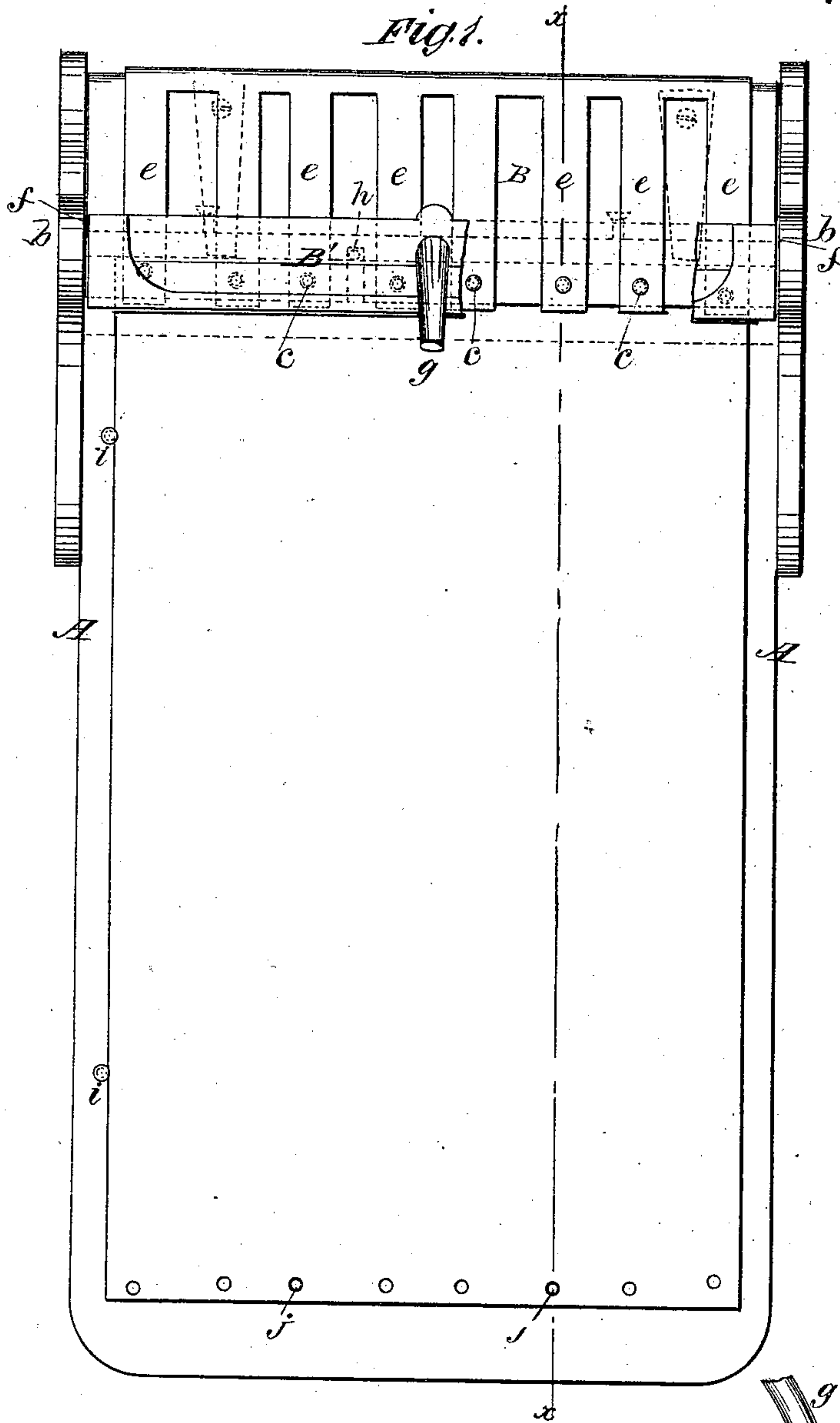


G. CHOATE.

DEVICE FOR PUNCHING SHEET-METAL FOR PIPE-ELBOWS.

No. 191,311.

Patented May 29, 1877.



WITNESSES:

Francis McArdle.
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UNITED STATES PATENT OFFICE.

GREENE CHOATE, OF EAST SAGINAW, MICHIGAN.

IMPROVEMENT IN DEVICES FOR PUNCHING SHEET METAL FOR PIPE-ELBOWS.

Specification forming part of Letters Patent No. **191,311**, dated May 29, 1877; application filed April 30, 1877.

To all whom it may concern:

Be it known that I, GREENE CHOATE, of East Saginaw, county of Saginaw, and State of Michigan, have invented a new and Improved Punching-Machine, of which the following a specification:

Figure 1 is a plan view of my improved punching-machine, having parts removed to show its construction more clearly. Fig. 2 is a longitudinal section on line *x x* in Fig. 1.

My invention consists of a table having arranged across one of its ends a series of dies, a guide containing a gang of punches fitted to the dies, and a lever for driving the punches, as hereinafter more fully described.

In the drawing, similar letters of reference indicate corresponding parts.

A is the table or bed of the machine, in a slot in one end of which a series of dies, *a*, are placed. To the edges of the table A, at the ends of the row of dies, ears *b* are secured, which project above, and also beyond, the end of the table. B is a guide for the punches *c*, that is pivoted to the ears *b*, and is supported by springs *d*. The punches *c* are fitted to the dies *a*, and are supported by the guide B, to which springs *e* are attached for raising the punches after being operated. B' is a bar that is pivoted in the ears *b* at *f*, and to it is attached a lever, *g*, by which it is turned on its pivot, so as to force the punches *c* downward. A stop-pin, *h*, projects from the table A under the guide B, for gaging the distance

between the holes punched and the edge of the sheet, and guide-pins *i* project from the table near one of its edges, for holding the sheet to be punched in its proper position in relation to the punches. Pins *j* project from the table at the end opposite the punches, for engaging two of the first series of holes punched in the sheet, while the second series is punched.

The operation of the machine is as follows: The sheet of metal to be punched is placed against the stop-pin *h* and the guide-pins *i*, and the lever *g* is brought forward, driving the punches through the metal, and upon being released the punches, and also the lever, are retracted by the springs *e*. The opposite end of the sheet is punched, after having turned the sheet over endwise, and placed two of the first series of holes punched on the pins *j*. This punching-machine is designed for use where accuracy is required, and is intended more particularly for punching elbow-blanks.

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

The bed A, having the stop and guide pins *h i j*, the dies *a*, guide B, punches *c*, bar B', and lever *g*, in combination, substantially as shown and described.

GREENE CHOATE.

Witnesses:

FREDERICK HARTMANN,
F. J. MOELLER.