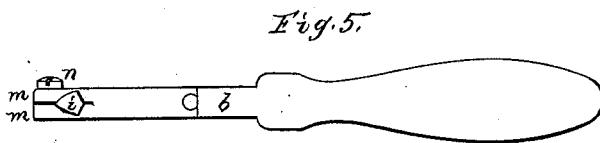
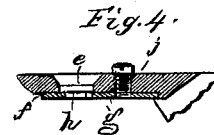
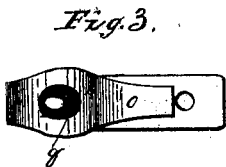
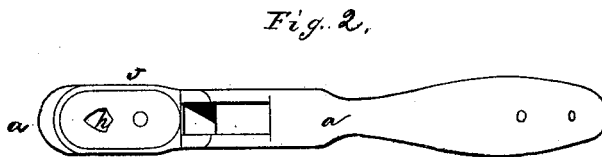
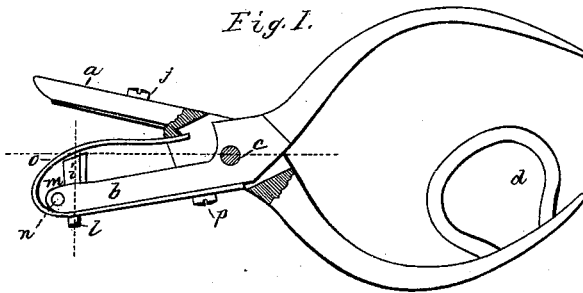


J. B. AIKEN.
Ticket Punches.

No. 195,876.

Patented Oct. 9, 1877.



Witnesses.

C. C. Perkins.
W. J. Pratt.

Inventor

Jonas B. Aiken
per Crosby Gregory attys.

UNITED STATES PATENT OFFICE.

JONAS B. AIKEN, OF FRANKLIN, NEW HAMPSHIRE.

IMPROVEMENT IN TICKET-PUNCHES.

Specification forming part of Letters Patent No. 195,876, dated October 9, 1877; application filed June 6, 1877.

To all whom it may concern:

Be it known that I, JONAS B. AIKEN, of Franklin, in the county of Merrimack and State of New Hampshire, have invented an Improved Ticket-Punch, of which the following is a specification:

This invention relates to ticket-punches; and has for its object the construction of a punch so that the dies, both male and female, may be readily and quickly changed for those of any other shape.

Figure 1 represents one of my improved punches in side elevation; Fig. 2, a face view of the female die; Fig. 3, a detail of the stripping-plate and spring; Fig. 4, a section through the female die and its holding-jaw; and Fig. 5, a face view of the part of the punch adapted to hold the male die.

The jaws or arms *a b* of the punch are pivoted at *c*, and one arm is or may be provided with a finger-opening, *d*. The upper jaw *a* is provided with an opening, *e*, for the discharge of chippings, and is also provided with a recess surrounded by a wall, *f*, (see Figs. 2 and 4,) into which recess the female die *g* may be dropped, such die being composed of a piece of steel provided with an opening, *h*, of any desired shape corresponding with the shape of the cutting-head of the male die *i*.

I am aware that dies are commonly held in dovetailed grooves cut in the jaws. It is difficult in such punches to cause the die-opening to register with the male die, whereas, in the construction shown by me, the die dropped into the recess centers itself, thereby making the punch more economical to manufacture, and when once in the recess it is retained accurately in place.

The opening *h* in the female die is placed opposite the opening *e* in the jaw, and the die *g* is held in the recess in the jaw by means of a screw, *j*. The male die *i* has its stem *l* fitted between the pronged ends *m* of the jaw *b*, (see Fig. 5,) and a clamp-screw, *n*, holds it securely therein.

In order that this male die may always register correctly with the female die, the hole in the jaw *b* to receive the shank *l* is bored so that it falls on a line at right angles to a line drawn through the center *c* of move-

ment of the jaws, and intersecting the face of the male die, as represented in Fig. 1 in dotted lines. This construction insures the passage of the male die into the die-opening *h*, without dragging more on one side than upon the other.

The sides of the male die below its face are somewhat undercut, to permit its passage through the die-opening *h* without binding. The face of the male die is so set as to cut with a shear-like action.

The stripping-plate *o*, made of spring metal, and connected to the jaw by a screw, *p*, has an opening, *q*, through which the male die passes. The free end of this plate enters between the jaws, and acts to throw them apart. The plate holds the ticket against the female die, and acts as a stripper to prevent the male die sticking to the ticket.

I claim—

1. In a ticket-punch, the jaw *a*, provided with a recess surrounded on all sides by the wall *f*, in combination with the steel die-plate, adapted to be dropped into such recess, which acts to register the die-opening with the male die, and, with the attaching-screw, to hold the die, all substantially as described.

2. In a ticket-punch, the jaw *b*, split at its forward end, and provided with a set-screw, in combination with a male die having its shank fitted between the forks of the jaw, substantially as described.

3. A ticket-punch provided with male and female dies, in combination with a stripping-plate having its free end extended between the jaws at their pivotal point, to operate both as a stripper and a spring to open the jaws, all substantially as described.

4. In a punch, the combination with a male die, of a single spring perforated to strip the ticket from the die, and arranged to separate the jaws of the punch, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JONAS B. AIKEN.

Witnesses:

G. W. GREGORY,
W. J. PRATT.