

(No Model.)

W. HILL.
Ticket Punch.

No. 230,129.

Patented July 20, 1880.

Fig. 1

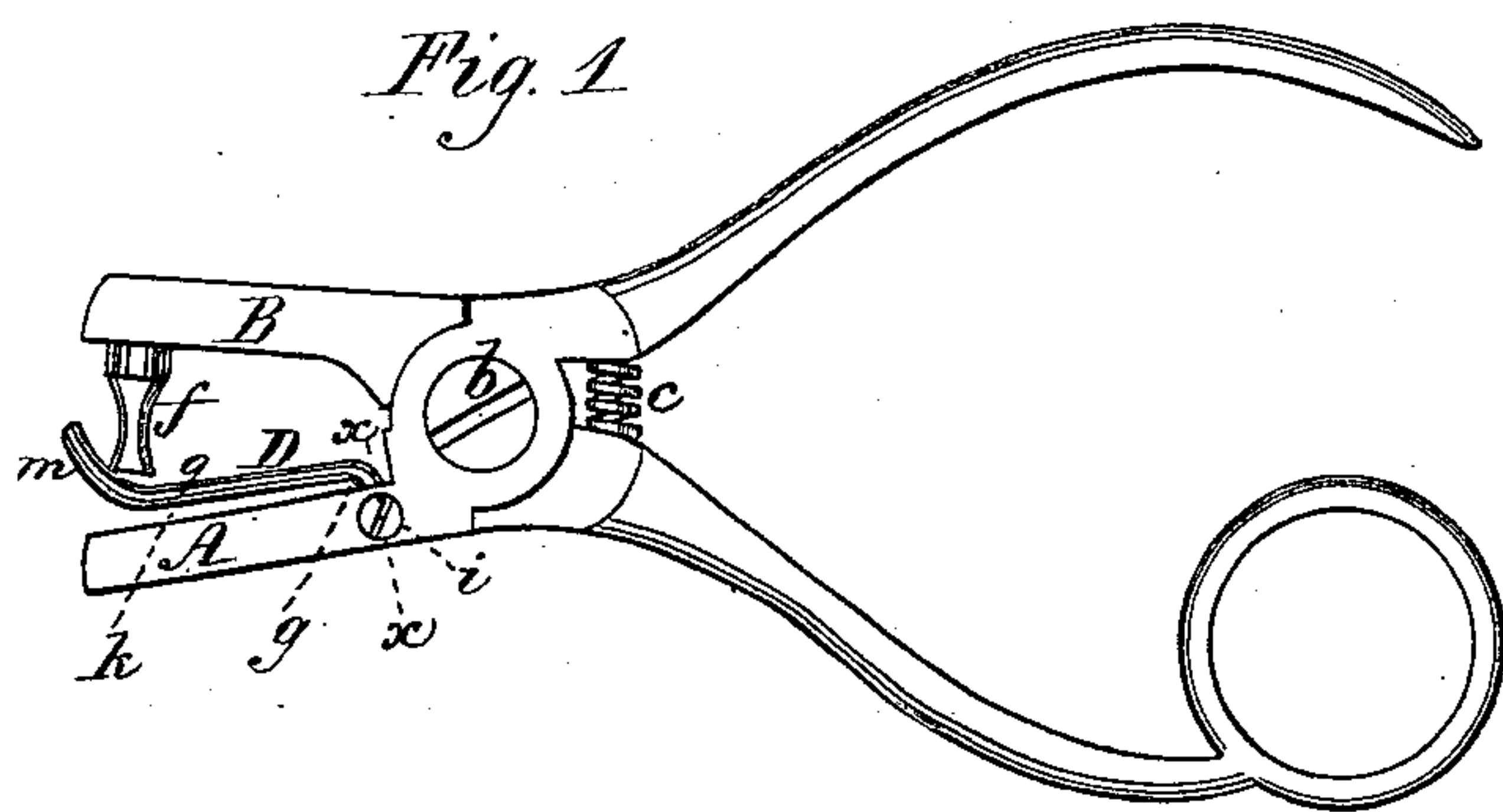


Fig. 2

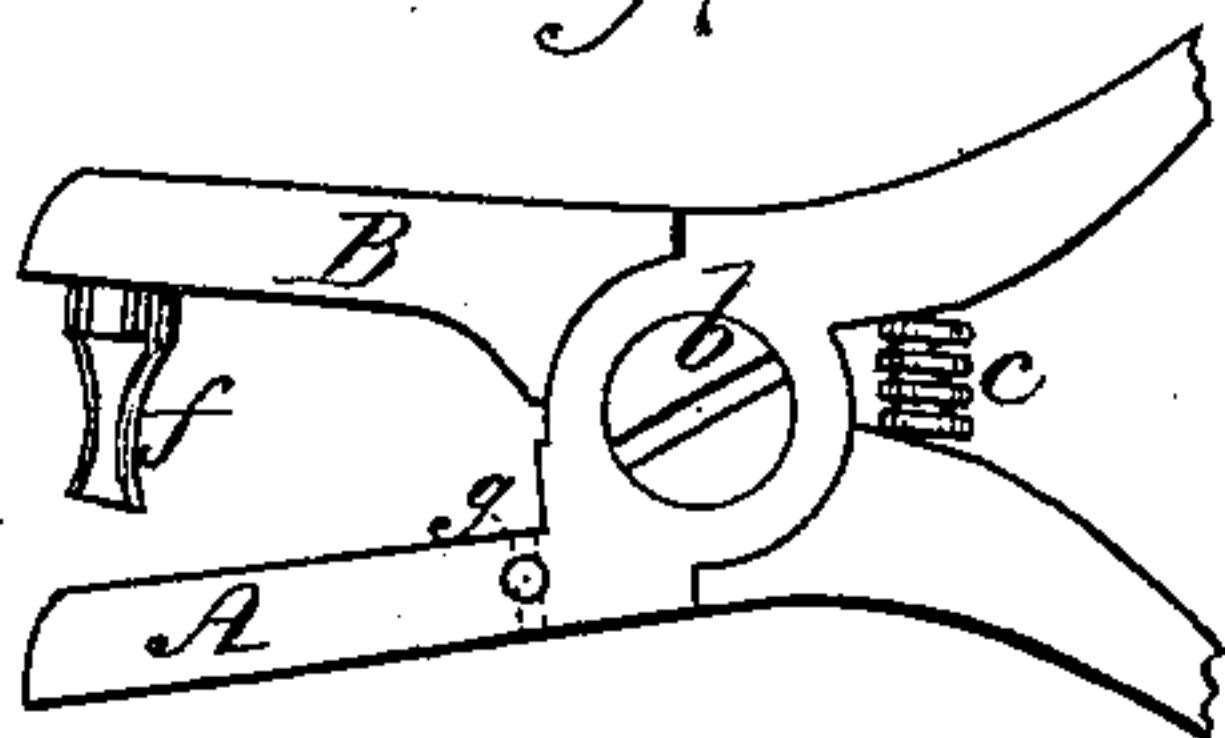


Fig. 3

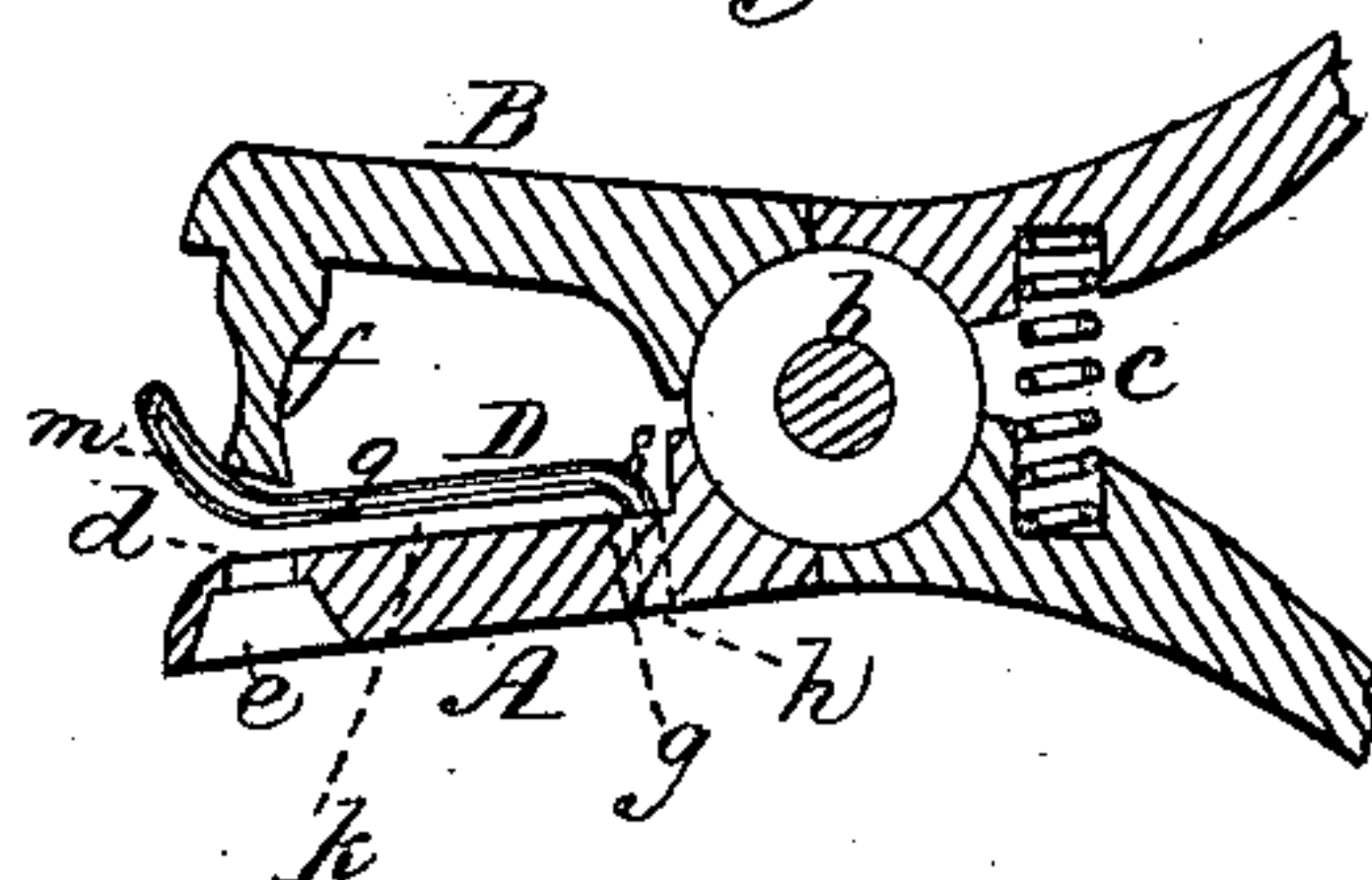


Fig. 4

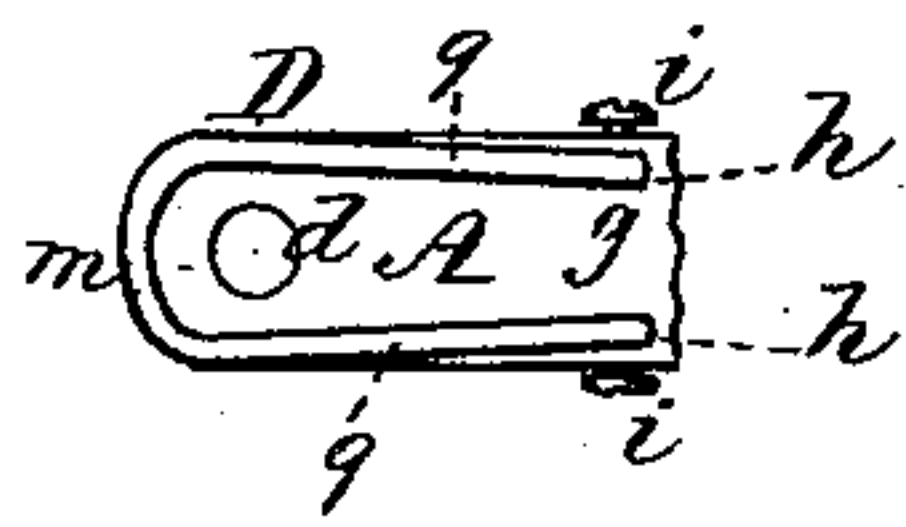


Fig. 5

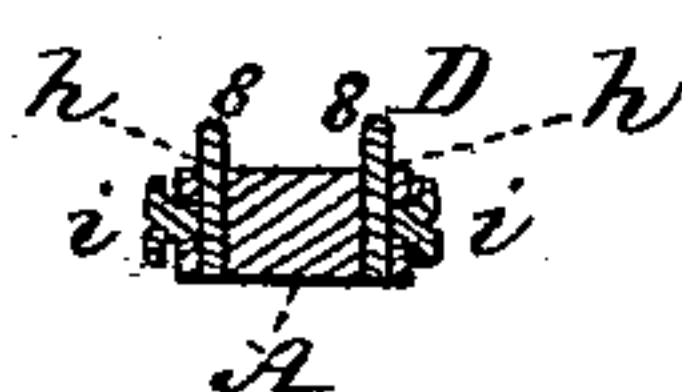
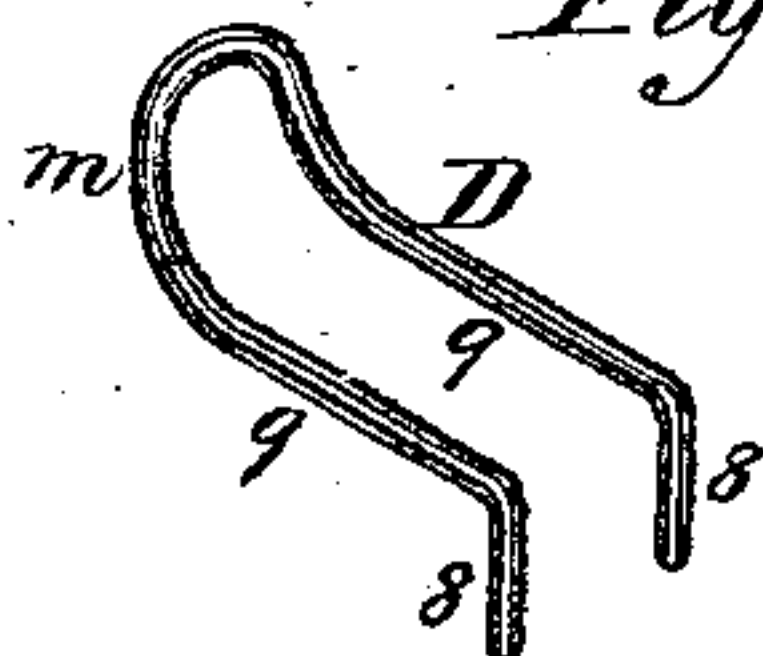


Fig. 6



Witnesses,
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Atty

UNITED STATES PATENT OFFICE.

WARREN HILL, OF BOSTON, MASSACHUSETTS.

TICKET-PUNCH.

SPECIFICATION forming part of Letters Patent No. 230,129, dated July 20, 1880.

Application filed March 18, 1880. (No model.)

To all whom it may concern:

Be it known that I, WARREN HILL, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Ticket-Punches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of a ticket-punch constructed in accordance with my invention.

Fig. 2 is an elevation of the head of the same with the stripper removed. Fig. 3 is a longitudinal section through the center of the punch.

Fig. 4 is a plan of the inner side of one of the jaws with the stripper secured thereto. Fig.

5 is a section on the line *x x* of Fig. 1. Fig. 6 is a perspective view of the stripper detached.

Ticket-punches have been provided with a "stripper" formed of a spring composed of a flat piece of sheet metal, the stripper having an opening through it for the passage of the male die; but strippers so constructed are objectionable, on account of their liability to frequent breakage, while they often become "set," so that they will not act to properly throw off the ticket from the male die.

Punches have also been made in which the opening for the reception of the ticket was formed by sawing an open slot into the solid metal forming one of the jaws, one side of the slot acting as a stripper; but this latter construction is expensive, and a punch so made is not only heavy and cumbersome, but has necessarily numerous spaces or cavities which become filled with dirt, which thus interferes with the free action of the implement.

My present invention has for its object to overcome these difficulties; and it consists in a punch having attached to the inner side of one of its jaws a stripper composed of a single piece of wire bent so as to admit of the passage of the male die between its two portions, which do not obstruct the view of the ticket in the ticket-slot and enable the operator to readily punch out any desired figure or character, which cannot be easily accomplished with a sheet-metal stripper, the wire stripper, which is secured in place by having its lower bent ends enter holes in the jaw, being set off therefrom, so as to leave a space or ticket-slot between them for the reception of the ticket to

be punched, while the upper end of the wire is bent so as to form a guide to facilitate the entrance of the ticket into the ticket-slot, by which construction the punch is greatly simplified and its cost materially reduced, as a single piece of bent wire performs the threefold office of a stripper, ticket-slot, and guide, while the open wire affords no lodgment for dirt, and consequently the punch is not liable to obstruction from this cause.

In the said drawings, A B represent the two jaws or arms of the punch, which are pivoted together at *b* and kept apart by a stiff spiral spring, *c*. The jaw A is provided with a female die, *d*, and an opening, *e*, to facilitate the discharge of the chippings, and the jaw B is furnished with a male die, *f*, having a cutting-head corresponding to the shape of the female die *d*.

To the inner face of the jaw A is secured, at *g*, the stripper D, which serves to detach or throw off the male die from the ticket after it is punched. This stripper D is composed of a single piece of wire bent into the form seen in Fig. 6, the two extremities 8 8 being bent at a right angle to the two side portions, 9 9, and entering holes *h*, formed in the jaw A, where they are firmly secured in place by means of set-screws *i*, the wire D being set off from the jaw A, so as to leave a space or ticket-slot, *k*, between the two for the reception of the ticket to be punched, the upper end of the stripper D being curved, as shown at *m*, so as to form a guide to facilitate the entrance of the ticket into the space *k*, the portions 8 of the wire serving as stops for the edge of the ticket to rest against.

By loosening the set-screws *i* the ends 8 of the wire D may be moved in their holes *h*, so as to vary the distance of the stripper from the jaw A in order to adapt the width of the space or ticket-slot *k* to the thickness of the tickets to be punched, after which the screws *i* are again tightened to confine the ends 8 securely in place. If desired, however, the set-screws *i* may be dispensed with, and the wire stripper permanently secured to the jaw.

The above-described stripper is exceedingly simple, and its cost very trifling, as there is no slot to saw in the solid metal, while it also forms, when attached to the jaw A, a ticket-

slot and guide thereto, thus avoiding complication, expense, and liability of getting out of order, while the open wire affords no opportunity for the accumulation of dirt and consequent obstruction of the punch, and affords a free and unobstructed view of the ticket within the ticket-slot, to enable the operator to accurately punch out any particular figure or character thereon, which cannot be done with a stripper composed of sheet metal, which is only provided with an aperture of a size sufficient to allow of the passage of the male die.

I do not claim, broadly, a stripper composed of wire; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a ticket-punch, the combination, with

the jaws A B and their cutting-dies, of a stripper, D, composed of a single piece of wire bent into the form shown and provided with angular extremities S S, adapted to enter holes *h h* in the jaw A at or near the point *g*, substantially as and for the purpose set forth.

2. In a ticket-punch, the combination, with the jaw A, of the bent wire stripper D, made adjustable therein by means of set-screws *i*, so as to vary the width of the space *k* for the reception of the tickets, substantially as set forth.

Witness my hand this 15th day of March, A. D. 1880.

WARREN HILL.

In presence of—

P. E. TESCHEMACHER,

W. J. CAMBRIDGE.