

W. J. Phelps,

Ticket Punch.

N^o 69,019.

Patented Sep. 17, 1867.

Fig 1.

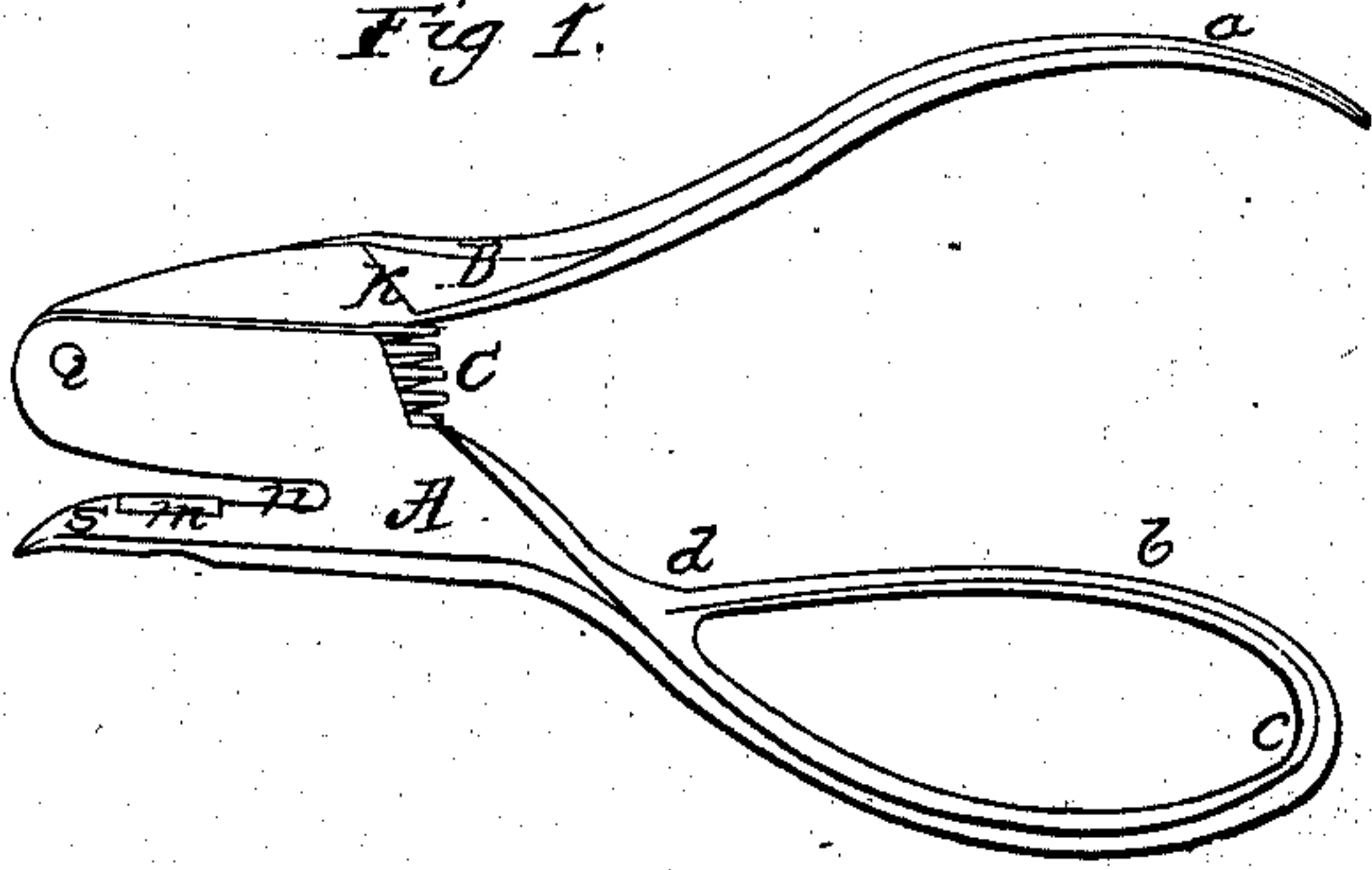


Fig 3.

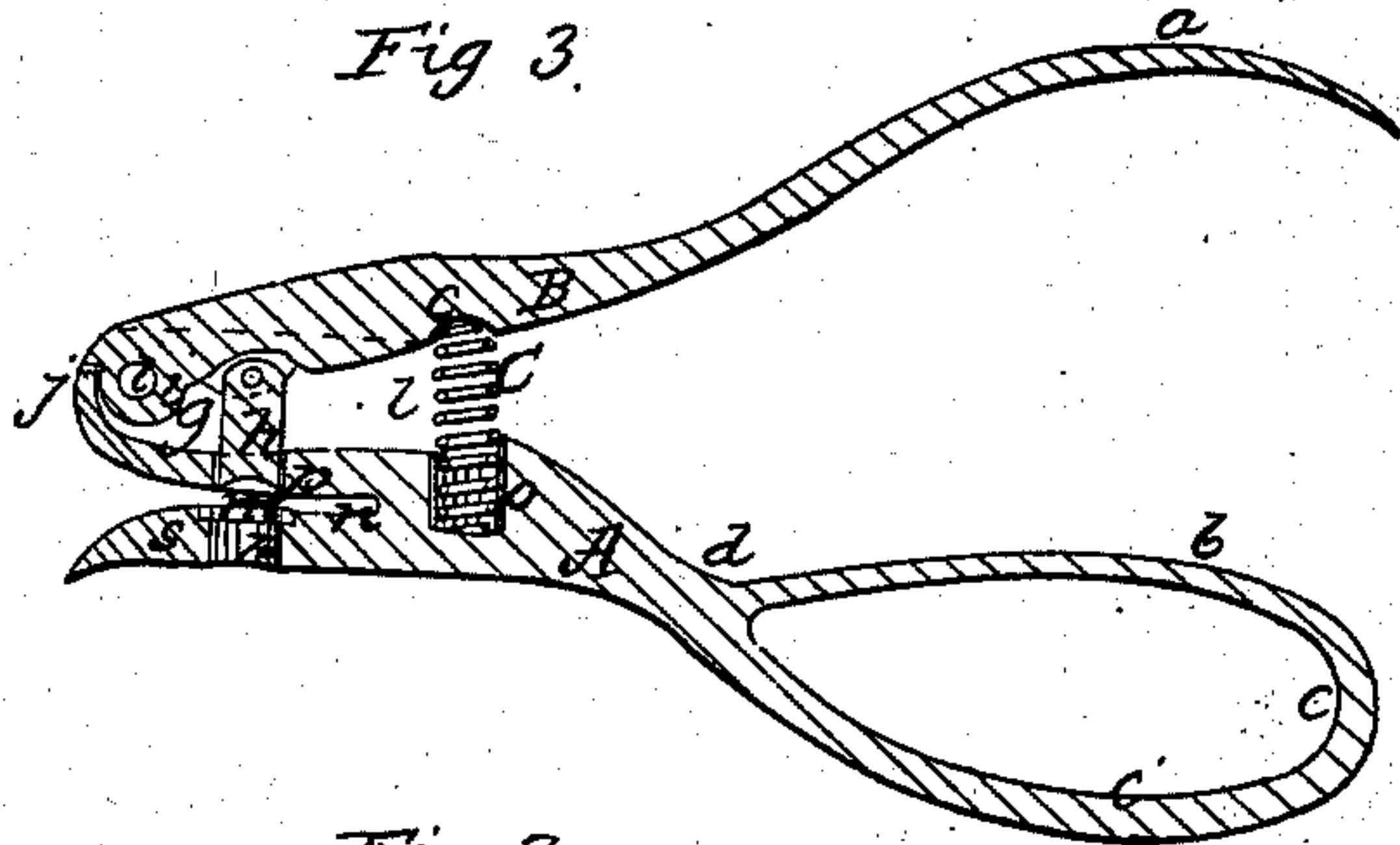


Fig 2.

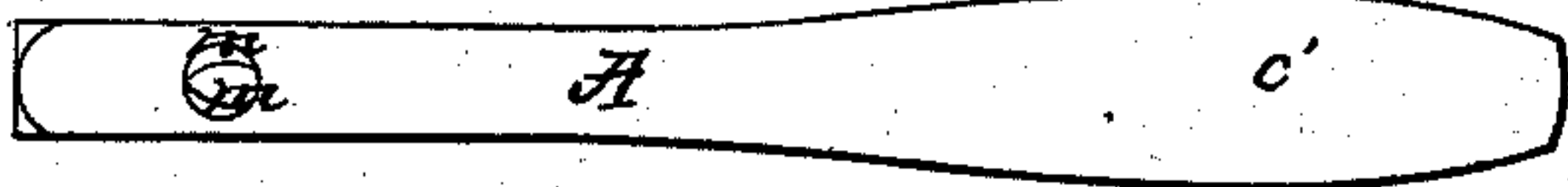


Fig 4.

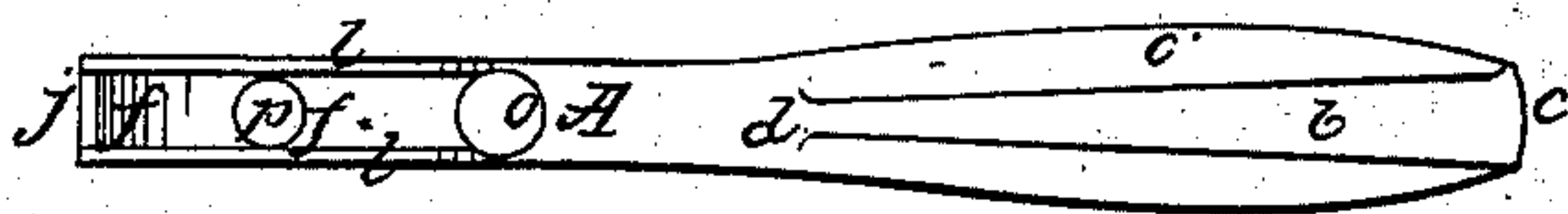
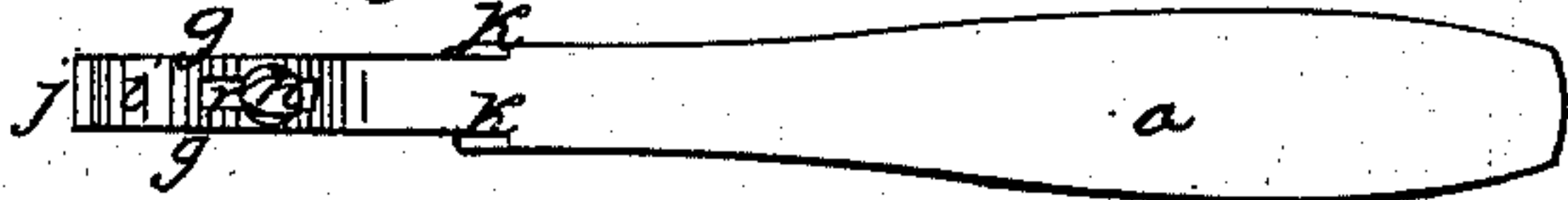


Fig 5.



Witnesses;
M B Root
M L Perry

Inventor;

William J. Phelps
by Buckle & Curtis
his Attorneys.

United States Patent Office.

WILLIAM J. PHELPS, OF SPRINGFIELD, MASSACHUSETTS.

Letters Patent No. 69,019, dated September 17, 1867.

CONDUCTOR'S TICKET-PUNCH.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM J. PHELPS, of Springfield, in the county of Hampden, and Commonwealth of Massachusetts, have invented a new and useful Improvement in Punches of the class known and used as Ticket-Punches; and I do hereby declare that the following is a full and exact description thereof, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, whereof—

Figure 1 is an elevation of said punch,

Figure 2 is a reverse plan,

Figure 3 is a longitudinal vertical section,

Figure 4 is a plan of one of the levers A detached, and

Figure 5 is a reverse plan of the other lever B, also detached.

My invention consists in attaching to one of the levers of a ticket-punch a die-spindle, which is pivoted to the lever, and operates as a plunger in reference to a female die seated in the other lever of the punch, the latter lever being slotted for the reception of the ticket to be punched. The two levers or arms of the punch are kept apart by a spiral spring, and a finger-loop is cast upon the slotted lever in convenient form for suspending the punch from the finger when not in use.

The construction of my invention is as follows: The lever B which carries the die-spindle is curved at a for convenience of handling, and is made of less thickness from the shoulders K K to the end, being made to fit a recess, *f f'*, cut in the other lever. Small ears *g g* project from the inner side of B, and one end of the die-spindle *h* is formed to enter the space *r* between the ears, and turns upon the pin or rivet *x* which passes through the ears and the spindle. A hole in the semicircular projection *i'* receives the pin *i* which holds the two levers, A and B, together, and is the fulcrum about which they turn. The lever A has the finger-loop *b c c'* formed upon it, the loop being cast as a part of the lever in place of a ring riveted thereto, as appears in some forms of ticket-punches. The longitudinal recess *f f'* is formed so as to receive the narrowed portion of the lever B, and openings to receive the pin *i* are formed in the sides of this recess. A slot, *n*, is cut in the lower side of A, of sufficient width to receive a ticket or strip of pasteboard, the outer end of the slot being made flaring, so as to facilitate the insertion of the ticket which is to be punched. The die-spindle *h* passes through an opening, *p*, formed in that part of A above the slot *n*, the shape of the inner surface, of *p* being made to correspond with the shape of the die-spindle, so as to act as an accurate guide for the latter as it is moved to and from the female die *m*. In that part of the lever A which is below the ticket-slot *n*, and which I denominate the lip *s*, is formed the opening *p'*, immediately beneath and in the same axial line with the opening *p*. If the lever A is made of brass or other soft metal, a steel die-plate, *m*, is set into the surface of the lip *s*, but if the lever is made of steel, or other metal of sufficient hardness, the female die will be formed in the lip itself in place of the separate die-plate *m*. The end of the die-spindle *h*, which acts as a cutter, is formed in any shape desired, either in the form of a device of fancy or of an initial letter, it being generally the case that different persons employed in cancelling tickets upon the same route have punches of different configuration in order that the work of each may be distinguished. The contour of the female die is made to correspond exactly with that of the male die, and the edges of both are carefully formed, so as to make a sharp and clean cut when the male die is made to enter the female die. The cutting end of *h* is also made concave, to produce a shearing cut instead of an abrupt cut. The opening *p'* below the die-plate is made large enough to allow the fragment of paper cut from the ticket to pass out without clogging the opening. To throw the levers A and B apart a spiral spring, C, is applied; one end being placed in a recess, *o*, in the lever A, and the other end in the recess *e* in the lever B. The part *j* upon the lever A meets a shoulder formed on the lever B and prevents the levers from opening too widely. As it is necessary that the die-spindle *h* should move in a right line with the axis of the openings *p* and *p'*, it is necessary to make the opening in B, through which the fulcrum or pin *i* passes, elongated, so as to allow a slight longitudinal movement of the lever B in reference to the other lever A.

I am aware that the formation of the ticket-slot *n* in the lever A is a device in use in other ticket-punches, and I do not claim the same as a part of my invention; nor do I claim as new the general arrangement of the levers A and B and their application to one another, when considered apart from the arrangement of the die-

die *h* pivoted between the ears *g g*, and acting as a male die (through the opening *p*) in reference to the die at *m*.

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

1. The combination of the lever *B* and die-spindle *h* pivoted thereto, with the slotted lever *A*, guide *p*, and die *m*, the whole arranged and operating substantially as set forth.
2. The arrangement of the slotted lever *A* and female die *m*, lever *B* and male die *h*, in combination with spiral spring *C*, substantially as described.

In witness whereof I have hereunto set my hand this 13th day of July, 1867.

WILLIAM J. PHELPS.

Witnesses:

F. D. HEYWOOD,
J. P. BUCKLAND.