

No. 685,467.

Patented Oct. 29, 1901.

W. E. CLOW.

TICKET PUNCH.

(Application filed Feb. 21, 1901.)

(No Model.)

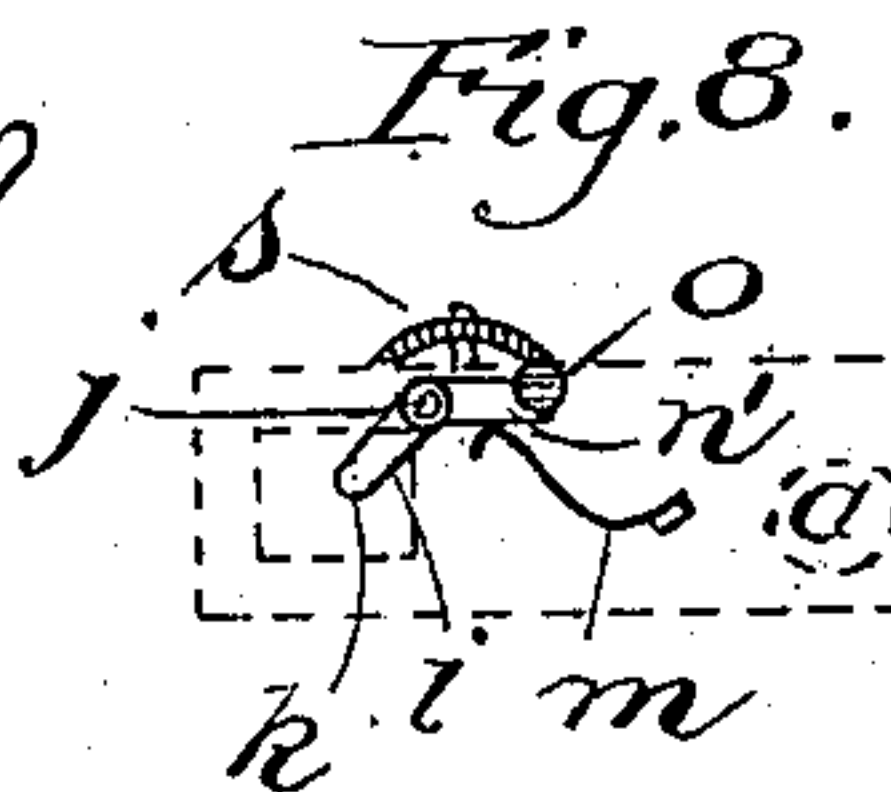
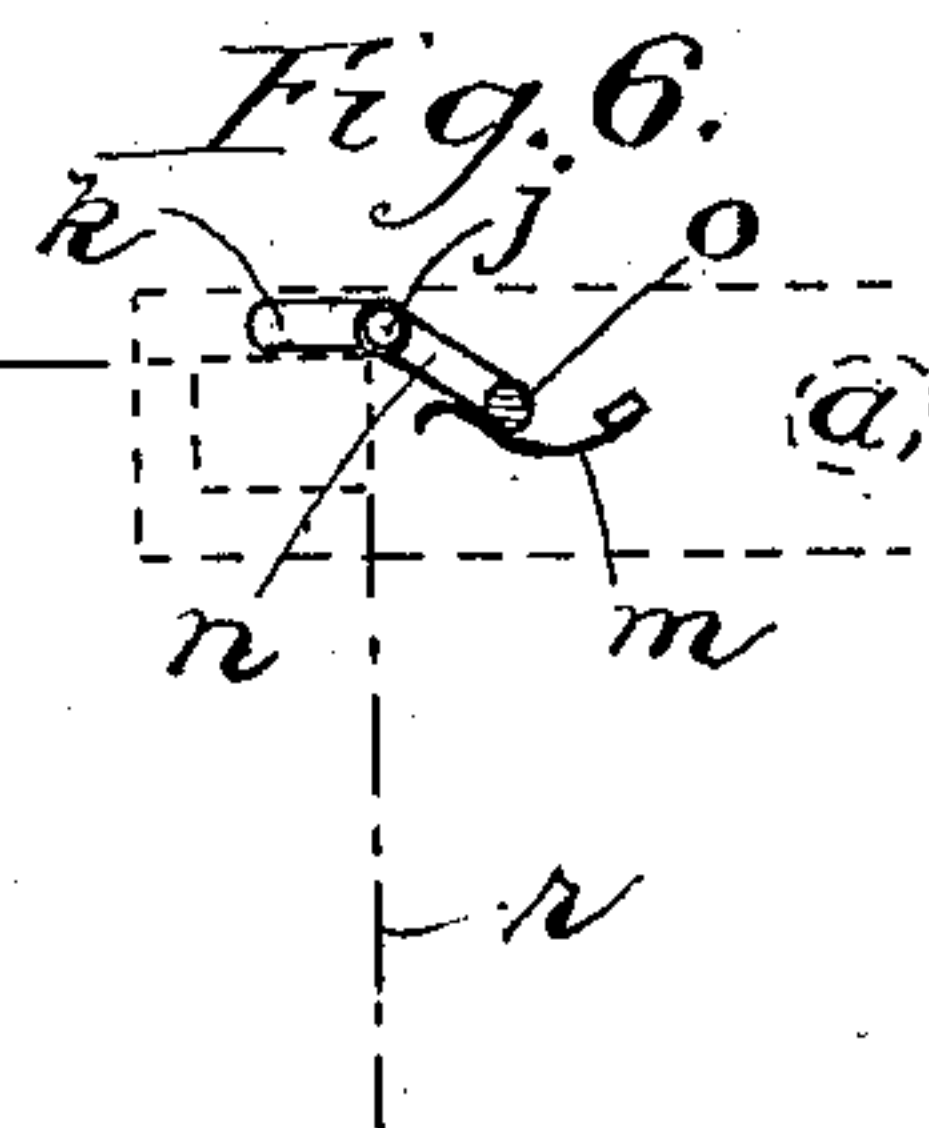
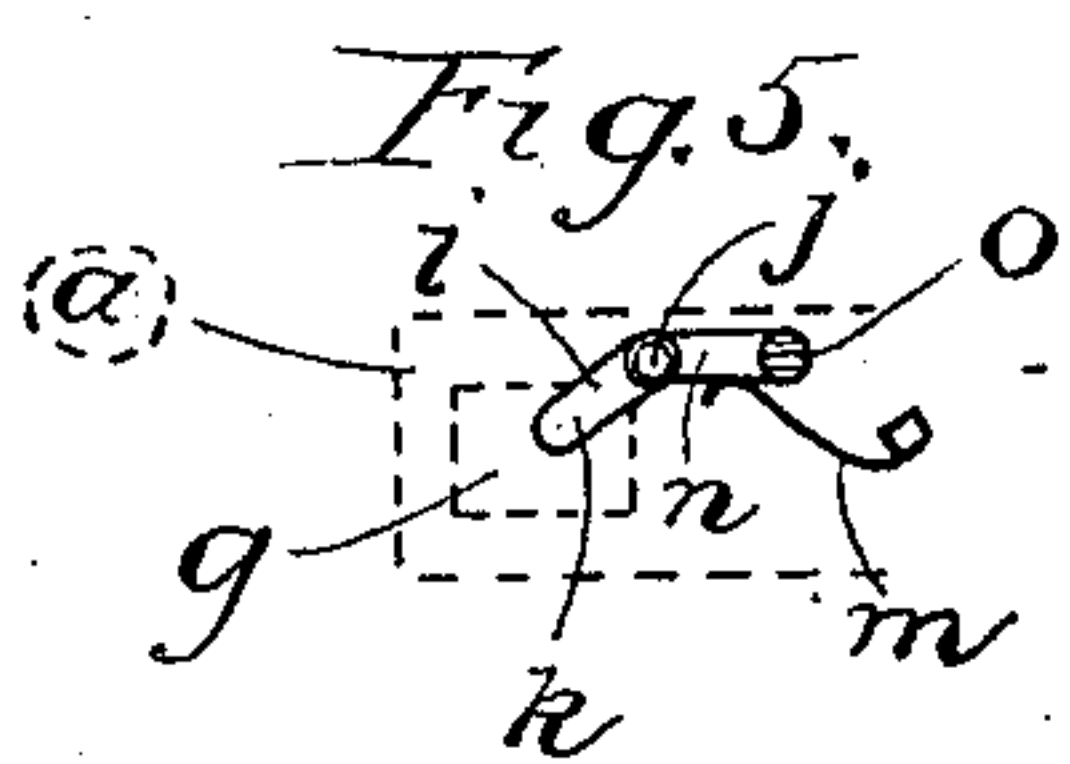
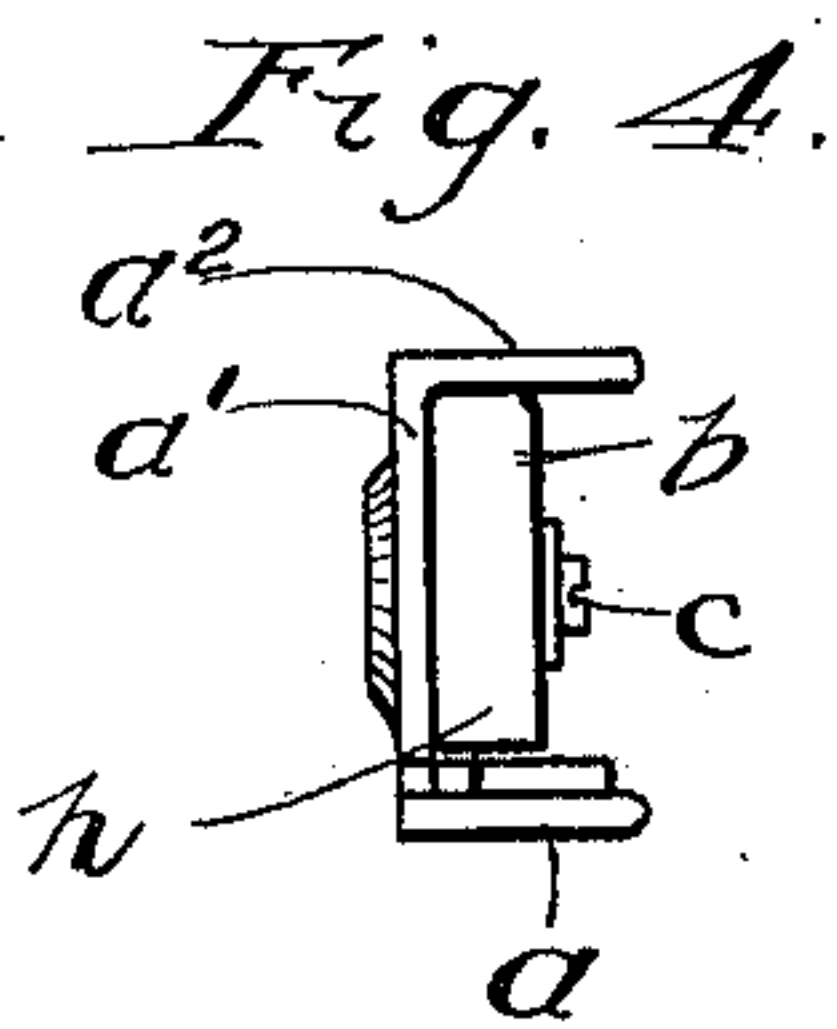
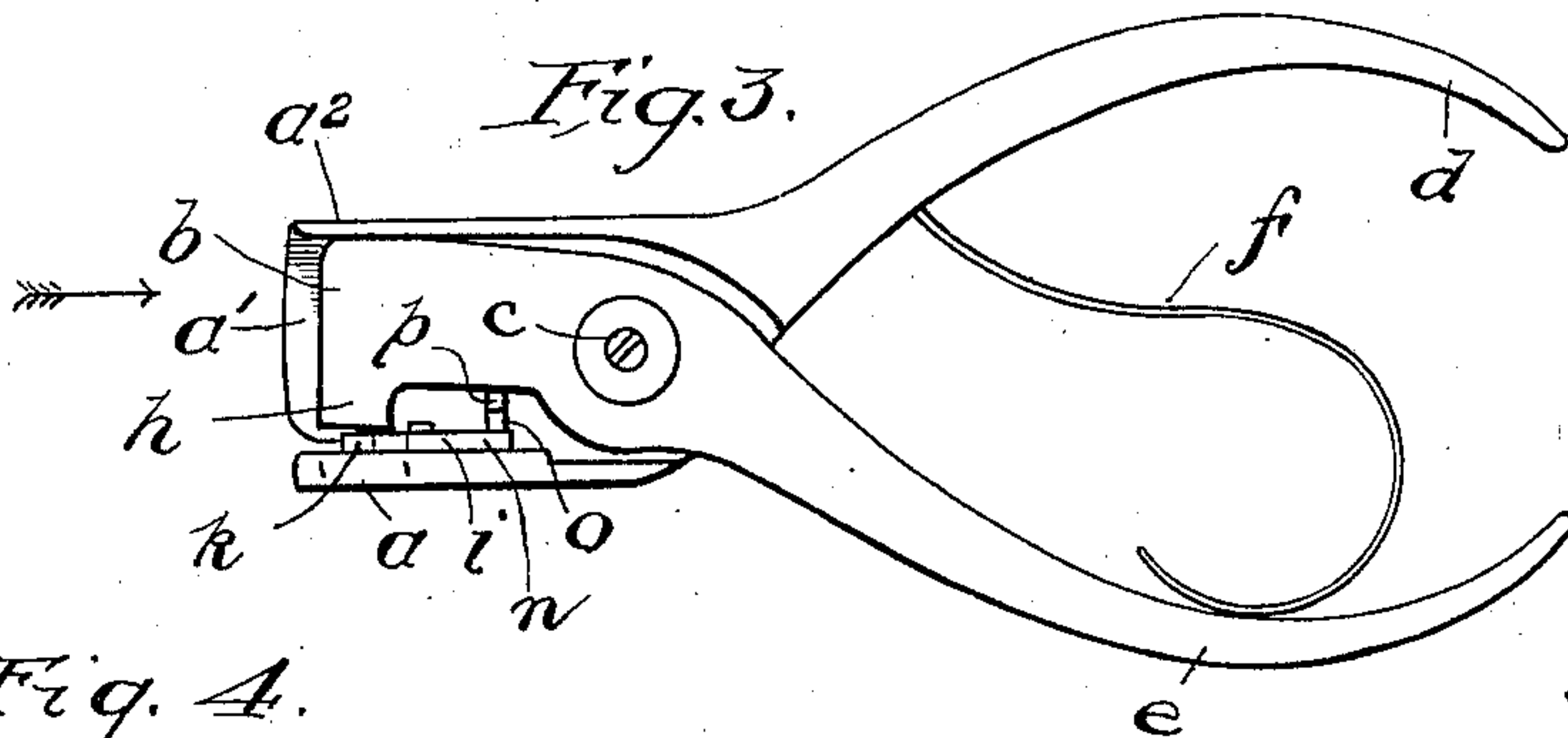
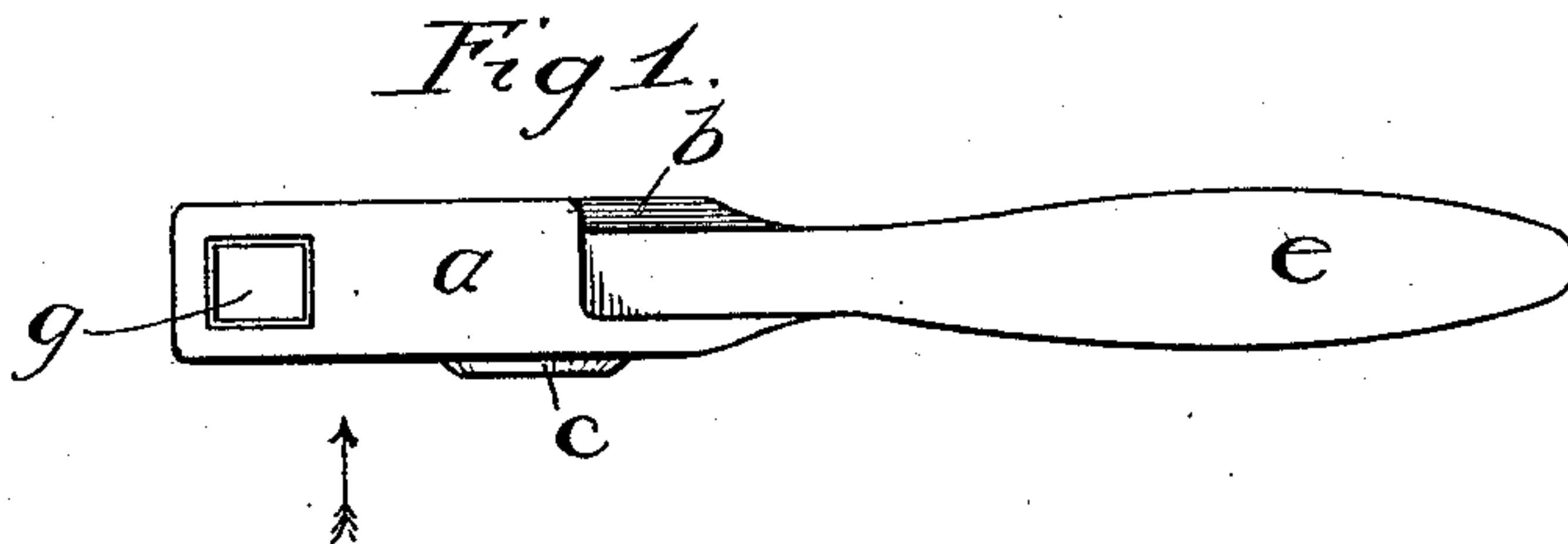
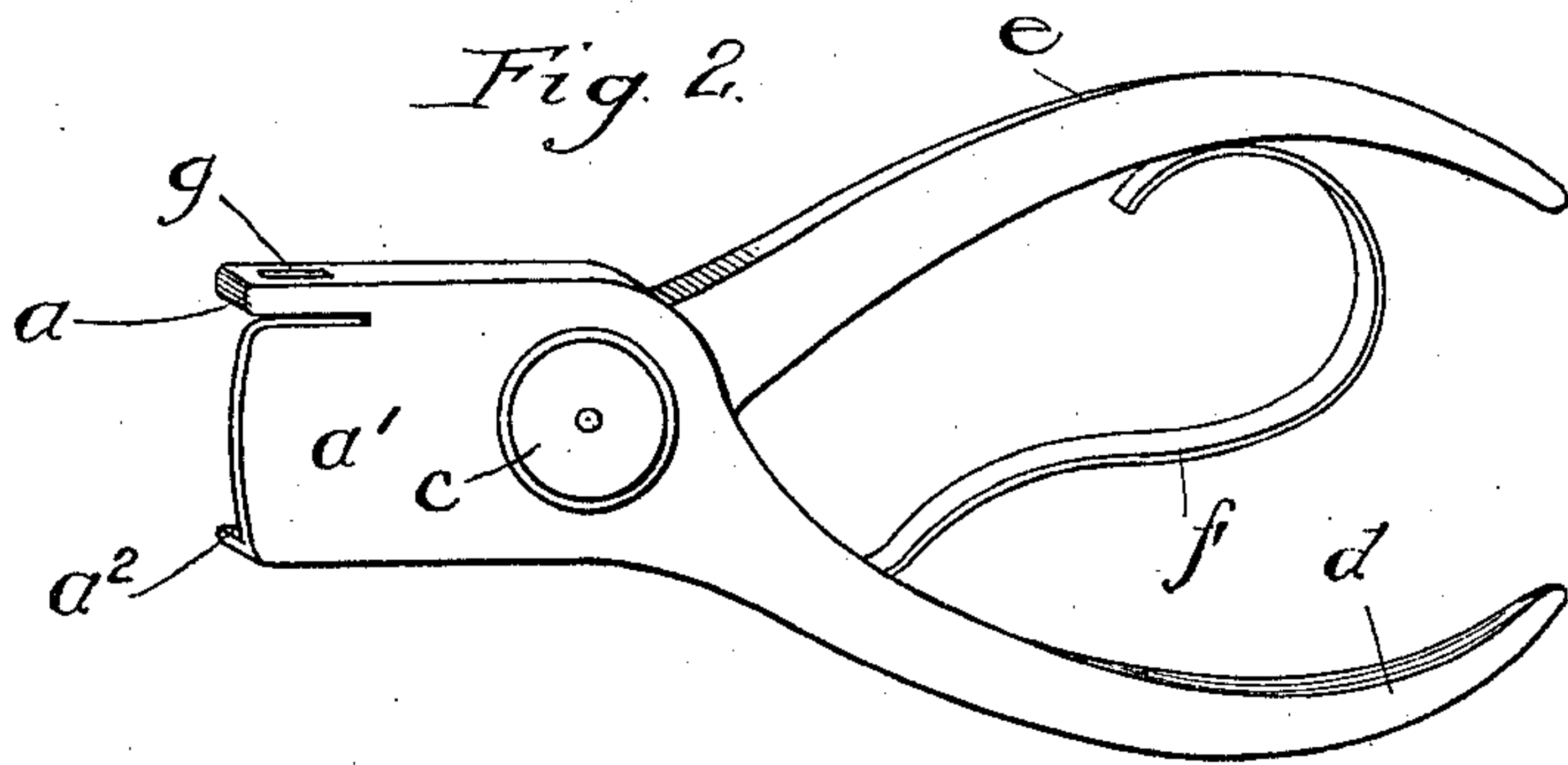
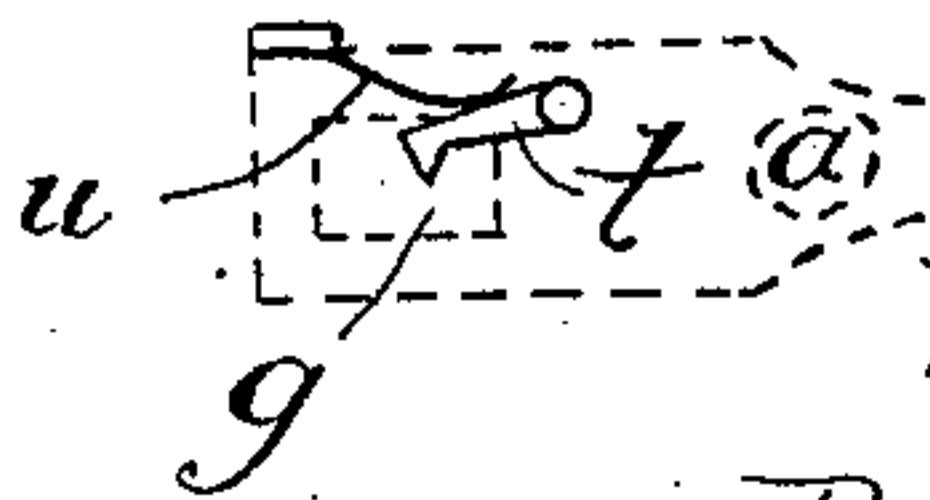


Fig. 7.



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UNITED STATES PATENT OFFICE.

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TICKET-PUNCH.

SPECIFICATION forming part of Letters Patent No. 685,467, dated October 29, 1901.

Application filed February 21, 1901. Serial No. 48,218. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. CLOW, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Ticket-Punches, of which the following is a specification.

My invention relates to ticket-punches, especially of the class employed for the removal of a portion of a card or ticket. As an example of the purpose for which my invention is adapted may be mentioned the class of punches employed by railway conductors for punching commutation-tickets in the collection of fares.

The object of my invention is to provide means for preventing the operation of the punch until the ticket occupies such a position therein that the operation thereof will result in the removal of the proper portion of the ticket—that is to say, it is my object to provide a punch which cannot be operated to remove an insufficient portion of the ticket and which is locked open unless released by means of the ticket.

It is my further object to provide means whereby the closing or subsequent opening of the jaws will produce an audible sound for indicating that the punch has been operated. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the punch. Fig. 2 is a perspective view thereof looking approximately in the direction of the arrow, Fig. 1. Fig. 3 is a view of the punch, showing the side thereof opposite to the side shown in Fig. 2. Fig. 4 is an end view looking in the direction of the arrow, Fig. 3. Figs. 5 and 6 are detail views illustrating the operation of the dog, whereby the jaws of the punch are normally locked in an open position. Fig. 7 is a detail view showing an alternate form of dog. Fig. 8 is a detail view showing a bell sounded by means of the locking-dog.

Similar letters refer to similar parts throughout the several views.

The upper and lower jaws *a* and *b* are pivotally connected together by means of the pin *c* and are operated by means of the handles *d* and *e*, respectively. Said handles tend to spread under the action of the spring *f* in the

manner usual in ticket-punches. The said upper jaw is provided with an aperture *g*, which constitutes the die for receiving the cutter or punch proper, *h*. In the form of device here illustrated the said upper jaw *a* has a side and bottom portion *a'* and *a''*, respectively, forming a housing for said lower jaw. The said bottom *a''* also limits the amount of opening of said jaws *a* and *b*.

The dog *i* is pivoted upon the pin *j* and is of such configuration that when in normal position the arm *k* of said dog occupies a position across the said aperture *g*, and thereby prevents the cutter *h* from entering therein. Said dog is held in said normal position by means of a spring *m*, secured to the upper jaw of the punch in any convenient manner. In Figs. 5, 6, and 8 said spring is shown as operative upon the arm *n* of the dog *i*; but it will be readily understood that the form and position of the spring may be varied—as, for example, by the substitution of a coiled spring or equivalent device. The said arm *n* of the dog *i* carries a lug or projection *o*, adapted when in normal position to abut against a corresponding lug or projection *p*, located upon the lower jaw *b*. The parts are so arranged and proportioned that when the arm *k* of the dog lies across the aperture *g* the lugs *o* and *p* are in juxtaposition and approximately in contact, thereby preventing the closure of the jaws *a* and *b*. The said lugs *o* and *p* furnish auxiliary means for locking the punch in an open position, the arm *k* itself being sufficient to prevent the closure thereof. The said auxiliary locking device is not a necessity, as will hereinafter be explained, but is desirable in order to relieve the said arm *k* of strain, for under certain conditions the said arm *k* may be required to be of delicate construction.

In operation when the ticket is properly inserted between the jaws *a* and *b* the said card or ticket comes into contact with the arm *k* of the dog *i* and pushes the same aside, so as to occupy a position approximating the position of the dog shown in Fig. 6 of the drawings, the final position of the ticket being indicated in dot-and-dash lines *r r* in said figure. The said rotation of the dog removes the arm *k* thereof from the aperture *g*, thereby permitting the cutter *h* to enter said aperture and remove a portion of the ticket. The

same movement of the said dog simultaneously withdraws the lug *o* from juxtaposition to the lug *p*, so that the jaws *a* and *b* may come together.

5 On account of the configuration and position of the dog the arm *k* is not removed from the aperture *g* until the ticket has covered approximately the entire area of said aperture or at least such a portion thereof that
10 the section removed from the ticket is adequate for the purpose intended by the issuers thereof.

As soon as the section of the ticket has been removed and the jaws of the punch have been
15 allowed to open under the pressure of the spring *f* the dog *i*, being no longer detained by the ticket or the cutter *h*, flies back into its normal position under the influence of the spring *m*.

20 It will be understood that in punching ordinary railway commutation-tickets there is usually a noticeable clicking noise due to the operation of the punch, this clicking noise indicating that a portion of the ticket has been
25 removed; but such noise may in the ordinary punch occur when an inadequate portion of the ticket has been removed. By my invention, inasmuch as the punch cannot operate unless an adequate portion of the ticket is re-
30 moved, the clicking noise affords an indication that such adequate portion has been removed. Moreover, by the sudden return of the dog *i* to its normal position in the manner above described the noise of operation of the herein-
35 described punch is increased.

In the form of dog shown in Fig. 8 the arm *n'* is of such configuration that when released after the operation of the punch said arm, operating under the force of the spring *m*,
40 strikes a bell *s*, secured in a convenient position upon the jaw carrying said dog. The operation of this modified form of dog is similar to the operation of the form above described, the additional feature being the
45 sound of the bell consequent upon the operation of the punch.

It will be evident to those skilled in the art to which such devices appertain that the production of an audible ringing sound may be
50 effected in a great variety of ways, and I do not limit myself to the construction herein shown. In Fig. 7 is also shown an alternative form of dog *t*, this latter form consisting of a single arm, a portion whereof extends
55 across the aperture *g* and is operated upon by a spring *u*. The purpose and operation of said last-mentioned dog are similar to the purposes and operation of the dogs above mentioned, except that the dog *t* is without the
60 auxiliary locking device and sounding device.

It is well known that punches of this general character are constructed in great varieties of form and design, and as modified forms of punch necessitate modifications in
65 the form of locking device I do not confine myself to the constructions herein specifically set forth.

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

1. A ticket-punch having ticket-operated means for normally maintaining said punch
70 in an open position.

2. A ticket-punch having a ticket-released detent or dog for normally holding the punch
75 open.

3. A ticket-punch having a cutter upon one of the jaws thereof and an aperture for receiving said cutter upon the other of the jaws thereof, in combination with a ticket-operated dog or detent normally occupying a position over the said aperture thereby preventing
80 said cutter from entering said aperture.

4. A ticket-punch having a cutter upon one of the jaws thereof and an aperture for receiving said cutter in the other of the jaws thereof, and a dog or detent mounted upon
85 the jaw containing said aperture, said dog or detent being adapted to extend partially across said aperture.

5. A ticket-punch having a cutter upon one of the jaws thereof and an aperture for receiving said cutter in the other of the jaws thereof, a dog or detent pivoted upon the jaw of said punch containing said aperture and a
90 spring operative upon said dog or detent, said spring tending to hold said dog or detent across said aperture.

6. A ticket-punch having a dog or detent pivoted upon the jaw containing the die or aperture of the punch, said dog or detent having an arm adapted to extend partially across
100 the die or aperture, in combination with an auxiliary locking device operated by means of said dog or detent.

7. A ticket-punch having a dog or detent pivoted upon the jaw containing the die or cutter-receiving aperture, said dog having a portion normally extending partially across
105 said die or aperture; in combination with a lug upon said dog, and a lug upon the opposite jaw of said punch said lugs normally being in juxtaposition thereby preventing the closure of the punch, but said lugs being out
110 of contact when said dog is in a position to permit the cutter to enter the die or aperture.

8. A ticket-punch having a dog or detent pivoted upon one of the jaws thereof said detent having a portion adapted to extend partially across the die or aperture of said punch,
115 in combination with a bell or other resonant body wherewith contact is made by said dog or detent upon the operation of the latter.

9. In a ticket-punch, a dog or detent pivoted to one of the jaws thereof, said dog or detent having a portion normally extending partially across the die or aperture in said punch
120 said dog or detent being released by contact with the portion of the ticket to be removed by the punch.

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