

No. 622,236.

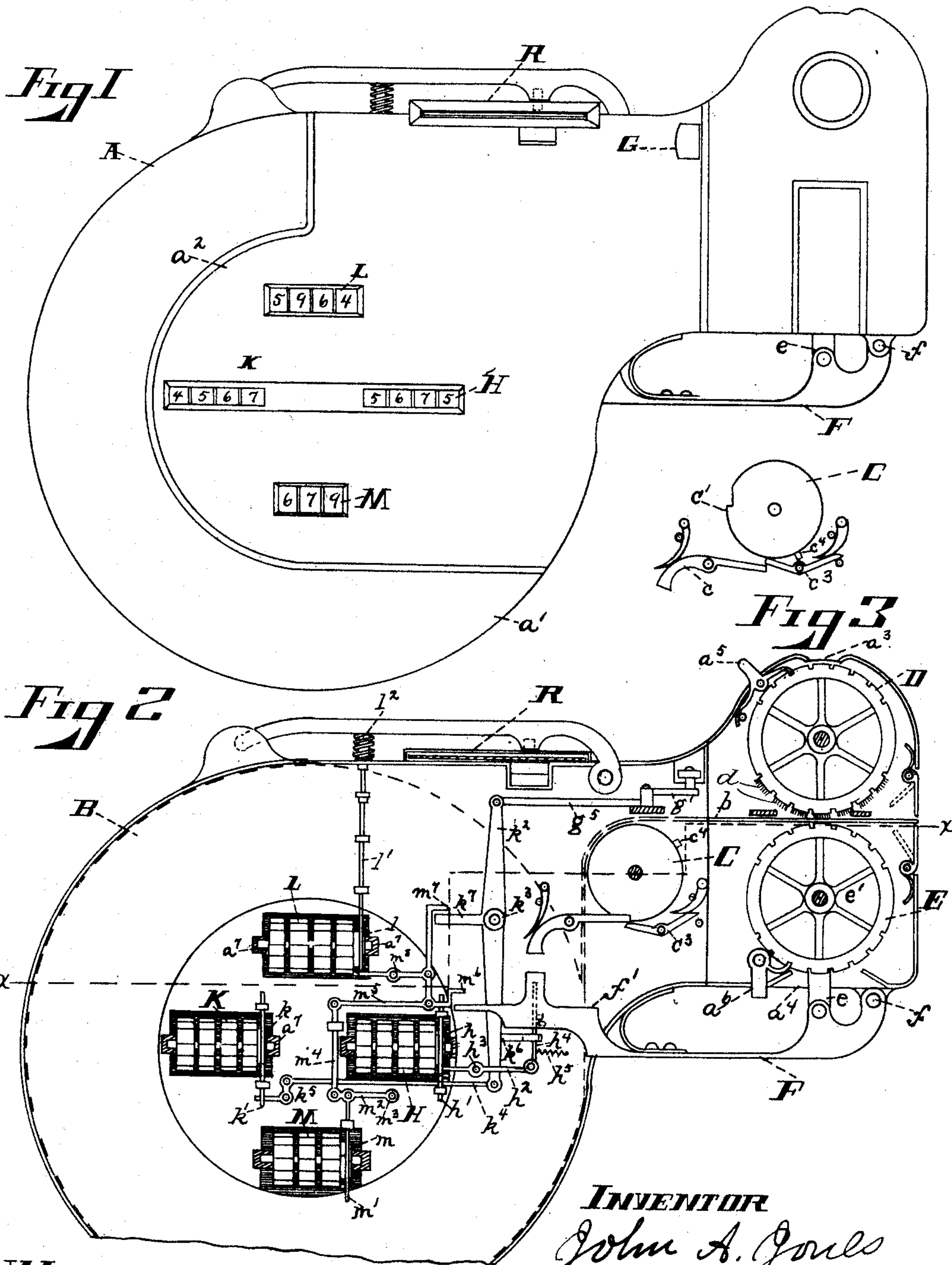
Patented Apr. 4, 1899.

J. A. JONES.  
CONDUCTOR'S RECORDING PUNCH.

(Application filed July 7, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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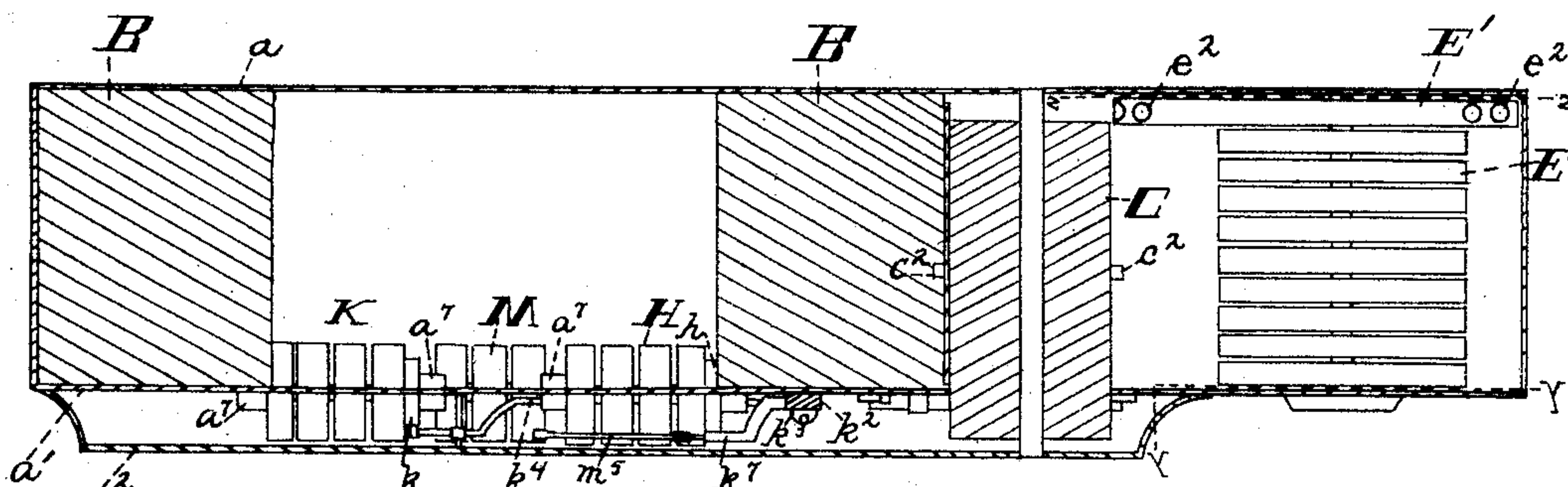
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**2 Sheets—Sheet 2.**



*Fig 4*

*Fig 6*

Fig 7

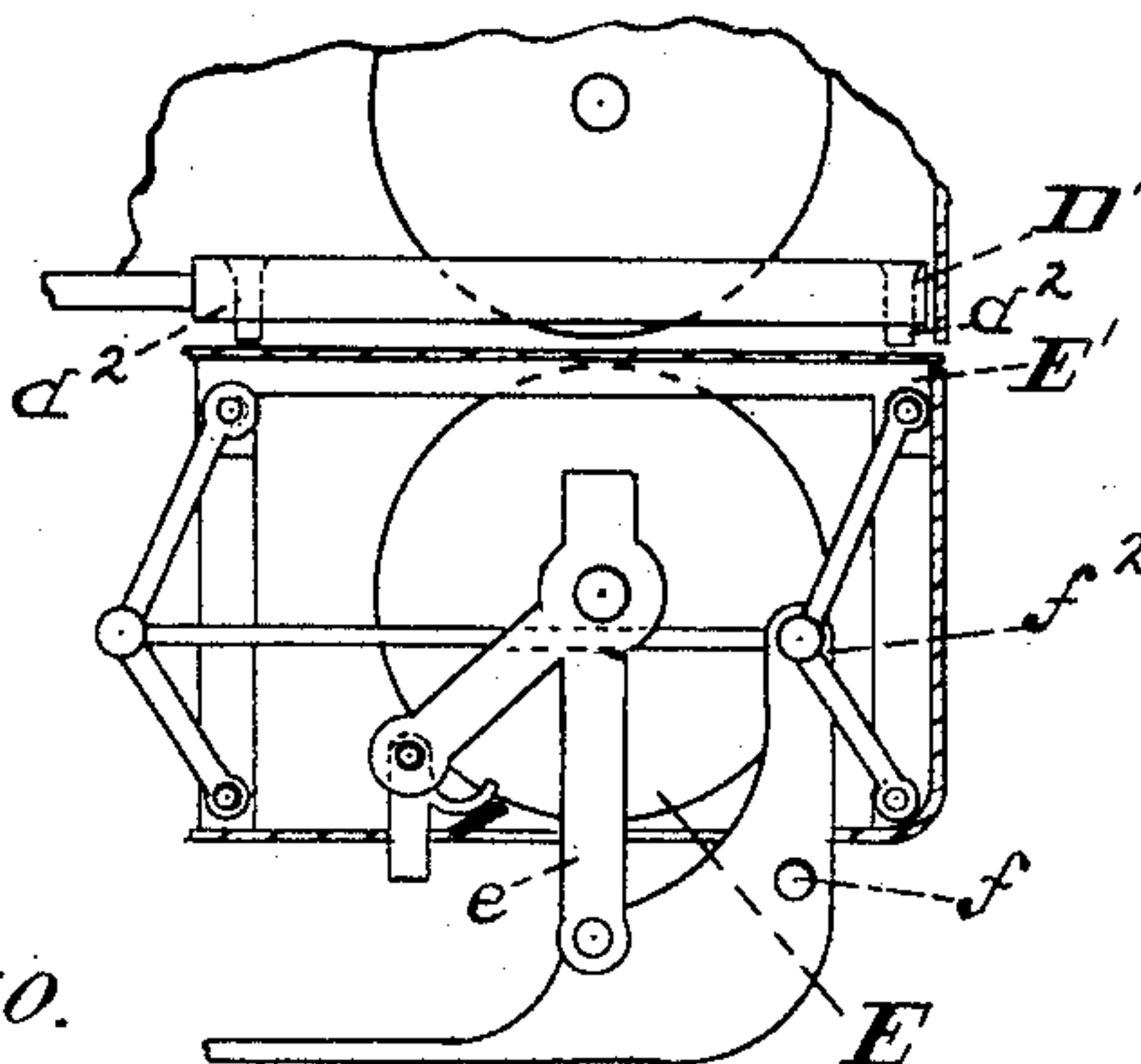
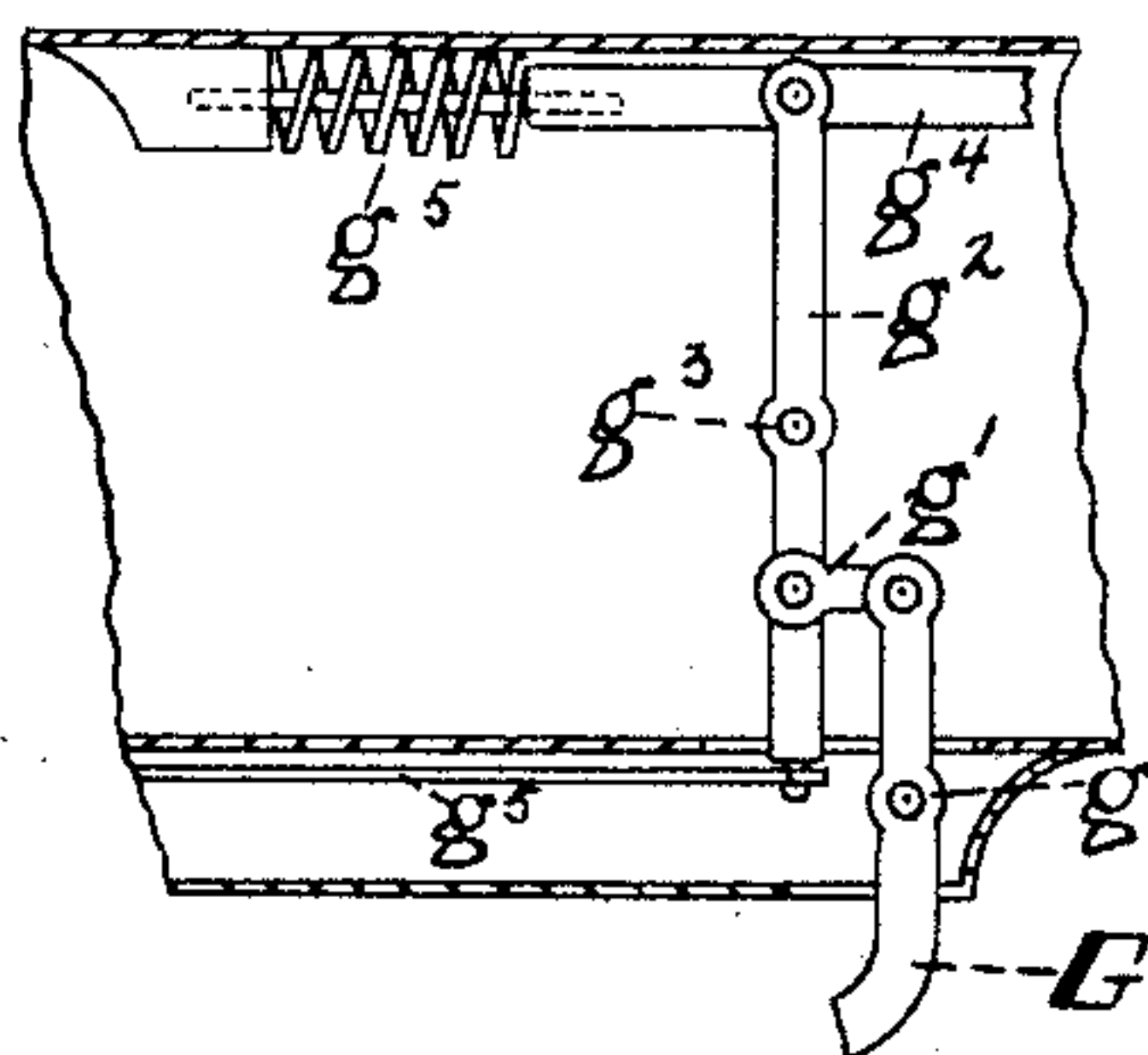
Fare Paid 5  
 b- Conductors Check  
 For This Trip Only Con-  
 ductor to give the re-  
 ceipt attached to pas-  
 senger when cash  
 fare is paid, also  
 c Transfer attached  
 when asked for  
 CHECK 14 ROLL 5  
 TRANSFER 14 ROLL 5  
 From Mt Auburn Cable to  
 all routes in same gener-  
 al direction  
 b<sup>2</sup> D<sub>N</sub> M<sub>1</sub> M<sub>2</sub> Date  
 19 11 30 10 1 5  
 Receipt 14 ROLL 5  
 When cash fare  
 is paid to be de-  
 tached by con-  
 ductor  
 Fare Paid 5

**Fig 5**

Passenger's Fare Receipt  
 For this Trip Only  
 This Receipt is not  
 Fare 5 transferable  
 Paid 3  
 Receipt 54 Roll 75

1			
2	17		
3	18		
4	19		
5	20		N- Min
6	21		1 5
7	22		2 10
8	23		3 15
9	24		4 20
10	25		5 25
11	26		6 30
12	27		7 35
13	28		8 40
14	29		9 45
15	30	N	10 50
16	31	E W	11 55
17	32		12 60

Fare 5 Conductor's  
 Paid 3 Check  
 Conductor's Fare Receipt  
 Receipt for Cash Fare also  
 Transfer when asked for  
 Check 54 Roll 75



*Fig. 10.*

*Fig.*

*Fig 8*

## WITNESSES

***INVENTOR***

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# UNITED STATES PATENT OFFICE.

JOHN A. JONES, OF CINCINNATI, OHIO.

## CONDUCTOR'S RECORDING-PUNCH.

SPECIFICATION forming part of Letters Patent No. 622,236, dated April 4, 1899.

Application filed July 7, 1898. Serial No. 685,311. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. JONES, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Conductors' Recording-Punches, of which the following is a specification.

My invention relates to conductors' recording-punches. Its object is to provide a punch from which the removal of a ticket, a number of which are to be inclosed within its case, cannot be effected until after the operation of the punch, which is simultaneously to punch the ticket and to register conspicuously the number and the amount of the fare. This object is attained by the means described in the annexed specification and illustrated in the accompanying drawings, in which—

Figure 1 is a view in front elevation of a recording-punch embodying my invention. Fig. 2 is a view, partly in front elevation, of the same with the front cap removed, and partly in section through the line  $y y$  of Fig. 4 to expose the operating mechanism. Fig. 3 is a detail end view of the roller and mechanism for locking it, this view showing it in its released position to permit the removal of a ticket, the locked position being shown in Fig. 2. Fig. 4 is a longitudinal sectional view on line  $x x$  of Fig. 2. Fig. 5 is a front view of a ticket. Fig. 6 is a similar view of another ticket used in a modified form of punch. Fig. 7 is a detail plan view of the mechanism for recording a fare other than a five-cent fare. Fig. 8 is a detail vertical sectional view of the punches and the mechanism for actuating them, taken through line  $z z$  of Fig. 4, looking toward the center of the machine. Fig. 9 is a detail plan view of a modified form of punch. Fig. 10 is a detail view of a modification in which a type-writer ribbon is used.

In the large end of the case A is placed a roll B of tickets, which pass thence as they are unwound over a roller C, thence between the upper and lower series of wheels D and E, respectively, journaled in the neck of the case. Upon each wheel of the upper series is a series of needle-points  $d$ , arranged in the form of different numerals, and on the lower wheels is a series of corresponding perforations where- by the ticket may be properly perforated by

bringing the upper and the lower wheels together, said needle-points passing through the ticket into said perforations.

The roller C is journaled at one end in the rear wall  $a$  of the case and passes through a perforation in the front wall  $a'$  into the cap  $a^2$ , which is secured to the side  $a'$ . Said roller is normally locked against rotating by a spring-pressed pawl  $c$ , pivoted to the side  $a'$  of the case to engage a detent  $c'$  upon it. When so locked, the teeth  $c^2$  upon the roller, which engage perforations  $b'$  upon the ticket  $b$ , prevent the drawing out of the ticket until the roller is released. The roller is released by a bell-crank lever F, which is pivoted at  $f$  to the under side of the case A and has an arm  $f'$ , that extends backwardly through the cap  $a^2$ , beneath the pawl  $c$ , and is connected by arms  $e$  to the shaft  $e'$  of the lower series of wheels E, so that when the lever F is pressed down by the conductor to punch the ticket  $b$  the pawl  $c$  is thrown out of engagement with the detent  $c'$  by it and rests upon the pawl  $c^3$ , as shown in Fig. 3. The ticket may then be drawn out until the pin  $c^4$  upon the roller C strikes the pawl  $c^3$  from under the pawl  $c$ , so that the latter may engage the detent  $c'$  and check the rotation of the roller.

The form of ticket used is that shown in Fig. 5, which consists of a "conductor's check," to be retained by the conductor and "turned in" at the office, a "transfer," to be given to the passenger when asked for, and the passenger's "receipt," to be given to the latter whenever a cash fare is paid by him.

In a line across the transfer are a number of blank spaces  $c^2$ , in which numerals are to be perforated by the wheels D and E. On a semicircumference of each one of the wheels of the upper series are equally-spaced numerals in regular order. Diametrically opposite these numerals on the other semicircumference of said wheel are the same numerals. The numerals on the circumference of each wheel of the lower series are the same as those upon the wheel of the upper directly opposite it. There are openings  $a^3$  and  $a^4$  in the case above the wheels D and below wheels E, by looking through which the conductor on releasing the wheels from the spring-pressed pawls  $a^5$  and  $a^6$  can bring the desired numerals into position such that when the



punch is operated the ticket is properly perforated.

On both the check and the receipt, in a column one above the other, are the numerals "5" and "3." When the ticket is in position to be punched, said column comes directly over a bar  $E'$ , Figs. 4 and 8, in which are four perforations  $e^2$  beneath the aforesaid numerals "5" and "3." Above said column is a bar  $D'$  with punches  $d^2$ , which in the normal position come over the numerals "3," so that when the lever  $F$  is pressed down to operate the wheels  $D$  and  $E$  the lower bar  $E'$  is raised by the arm  $f^2$ , Fig. 8, of the lever  $F$ , as shown in Fig. 8, and the numerals "3" are punched out of both check and receipt, leaving the "5's" to indicate that a five-cent fare has been paid. When a three-cent fare is paid, the conductor presses back the lever  $G$ , which projects through the side  $a'$  and the cap  $a^2$  of the case and is pivoted at  $g$  to the top of the case, Fig. 7. This lever is connected by a link  $g'$  to a second lever  $g^2$ , pivoted at  $g^3$  to the top of the case. The lever  $g^2$  is pivoted at one end to the bar  $g^4$ , which is connected to the bar  $D'$ . Pressing back the lever  $G$  draws the punches  $d^2$  over the numerals "5," so that the numerals "3" are left to indicate the payment of a three-cent fare. The lever  $G$ , with its connected mechanism, is returned to its normal position by a spring  $g^5$ .

The mechanism for registering the fares is as follows: Journaled in boxes  $a^7$  in the side  $a'$  of the case within the inner circumference of the roll  $B$  are four shafts, each supporting a system of registering-wheels  $H$ ,  $K$ ,  $L$ , and  $M$ , respectively. Attached to the end wheel of each of these registers is a ratchet-wheel  $h$ ,  $k$ ,  $l$ , and  $m$ , respectively, which are operated by a pawl secured to each of the vertically-sliding bars  $h'$ ,  $k'$ ,  $l'$ , and  $m'$ , respectively. The bar  $h'$  is operated by a lever  $h^2$ , which has a fulcrum at  $h^3$  and is pivoted at its opposite end to a vertical bar  $h^4$ . Suppose a five-cent fare to have been paid. When the lever  $F$  is pressed down to punch the ticket, the fare is registered on the register  $H$ , the motion of the lever being conveyed by the bar  $h^4$  to the lever  $h^2$ , thence to the bar  $h$ , which operates the register  $H$ . These registers consist of wheels upon a common shaft, on the circumference of each of which are numerals from "1" to "10," those on the first wheel to represent digits, on the second tens, and so on. These wheels are geared together so that when the "9" has been registered on the digits-wheel the latter has a pin which at the next operation registers "1" on the tens, and so on. The mechanism for so connecting registering-wheels is well known and therefore need not be more specifically described. If a three-cent fare be paid, it is registered on the register  $K$  through the following mechanism: The lever  $g^2$  is connected to a vertical lever  $k^2$  by a bar  $g^5$ . The lever  $k^2$  is pivoted at  $k^3$  to the side  $a'$  and its opposite end is connected by a bar  $k^4$  to a bell-

crank lever  $k^5$ , pivoted to side  $a'$ , which operates the vertically-sliding bar  $k'$  to register the fare. On the vertical lever  $k^2$ , below its fulcrum, is a projecting arm  $k^6$ , slotted to engage the vertical bar  $h^4$  to disconnect it from the lever  $f$  when a three-cent fare is being registered. The bar  $h^4$  is returned to its normal position by a spring  $h^5$ . If a transfer be paid as fare, the conductor punches it in the punch  $R$  upon the top of the case, the fare being registered on the register  $L$  by the arm  $l^2$ , connected to said punch.

The register  $M$  is for registering the total number of fares—five-cent, three-cent, and transfers—taken in per trip. Its operating-bar  $m'$  is pivoted to the bar  $m^2$ , which is itself pivoted at  $m^3$  to the side  $a'$ , and at the opposite end is connected by a bar  $m^4$  to the bar  $m^5$ , whose end  $m^6$  extends out over the end of the arm  $f'$  to register the five-cent fares. Pivoted to the bar  $m^5$  is a bar  $m^7$ , which is operated by an arm  $k^7$  upon the lever  $k^2$  to register the three-cent fares. Pivoted to the bar  $m^7$  is a lever, which is pivoted to the side  $a'$  at  $m^8$  and has one end extending beneath the bar  $l'$  to register the transfer-fares.

Instead of the wheels  $D$  and  $E$  flat plates can be used, the lower one to contain perforations, as shown in Fig. 9, and to be brought in contact with the upper plate by mechanism similar to that for raising the bar  $E'$ . (Shown in Fig. 8.) In the upper plate are perforations, similar to those in the lower one, in which are inserted movable punches. The ticket to be used with this modified form is shown in Fig. 6. It also contains the conductor's check, the transfer, and the receipt; but on it there are numbers printed to be punched out to indicate the direction, date, hour, &c.

Another modification is to have type upon the circumference of the wheels  $D$  instead of the needle-points, between which and the ticket shown in Fig. 5 a type-writer's ribbon  $T$ , which works upon rollers  $t$  and  $t'$ , journaled in the casing sides upon opposite sides of the wheel  $D$ , is to be interposed. Upon the roller  $t$  is a ratchet-wheel  $t^2$ , which engages a pawl  $t^3$ , which is secured to the bar  $E'$ . The roller  $t'$  keeps the ribbon  $T$  inked. In place of the lower wheel a rubber stamp operated by the same means as said wheel may be employed to bring the ticket against the ribbon to print the desired numerals thereon.

The tickets shown in Figs. 4 and 6 are not claimed herein, as they are intended to be made the subject of a later application.

What I claim is—

1. In a conductor's punch the combination of a case one end of which is to receive a roll of tickets, an upper and a lower series of punches between which the tickets pass out of the case, a roller located between said roll and said punches for engaging the tickets, means for locking said roller, the registers and the lever pivoted to said case the depression of which simultaneously operates



the punches, releases the roller and operates the registers, substantially as shown and described.

2. In a conductor's punch the case for inclosing tickets, a roller to engage said tickets, a spring-pressed pawl to lock said roller, the punches between which the tickets pass, a register, a sliding bar to operate said register, a lever pivoted to the case the pressing of which operates said punches, said spring-pressed pawl and said sliding bar, substantially as shown and described.

3. In a conductor's punch the combination of the case for inclosing tickets, the roller therein for engaging the same, the pawl for locking said roller, two sets of punches each consisting of an upper and a lower punch, the two registers for different cash fares, the sliding bars to actuate the same, the lever attached to the case for simultaneously operating the two sets of punches, releasing the roller and actuating one of said sliding bars to register the fare, the lever for simultaneously changing the position of one set of said punches to register a fare of different amount than the former and operating the other of said sliding bars, substantially as shown and described.

4. In a conductor's recording-punch the combination of the case inclosing tickets, the roller therein to engage the same, the pawl for

locking said roller, the punches between which said tickets pass out, registers in the case for registering different kinds of fares, and one for registering the total amount of fares, sliding bars for operating said registers, a lever for simultaneously punching the ticket, releasing the roller and operating one of said registers, a lever for changing the punches to punch a different fare, operating the proper register and releasing the aforesaid lever from the aforesaid register, and mechanism for connecting the register for the total fares with both of said levers, substantially as shown and described.

5. In a conductor's recording-punch the combination of the case for receiving tickets, the roller for engaging the same, the pawl for locking said roller, the punches between which the tickets pass out, the registers H, K and M, the lever pivoted to the case simultaneously to operate the punches release the roller and register the fare on H, the lever for changing the position of the punches and to register the fare on K, the register M and the means for connecting it to said levers, substantially as shown and described.

JOHN A. JONES.

Witnesses:

EMMA LYFORD,  
WALTER F. MURRAY.