

J. F. OHMER.
FARE REGISTER AND RECORDER.
APPLICATION FILED JAN. 10, 1910.

992,381.

Patented May 16, 1911.

5 SHEETS—SHEET 1.

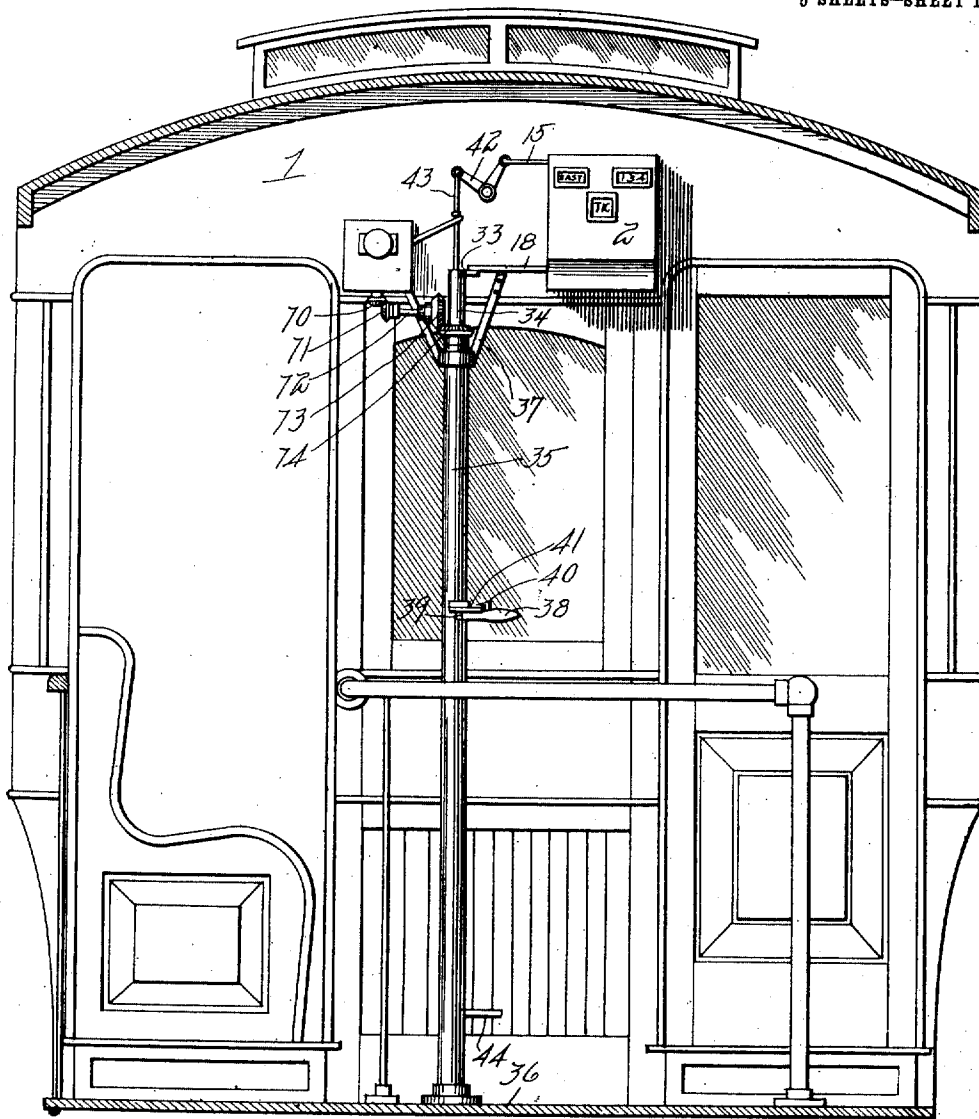


Fig. 1.

Jno. F. Ohmer.
Inventor

Witnesses
W. Lubler
Howard F. Smith

By

R. J. McCarty
his Attorney

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5 SHEETS-SHEET 2.

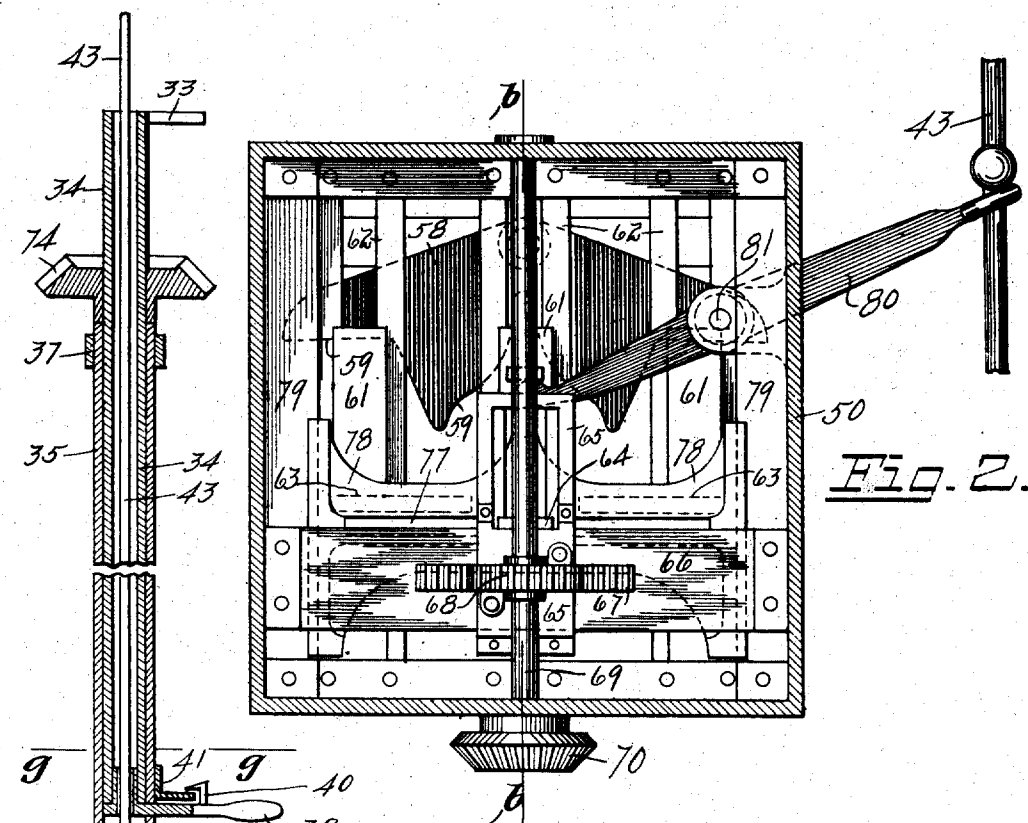


Fig. 2.

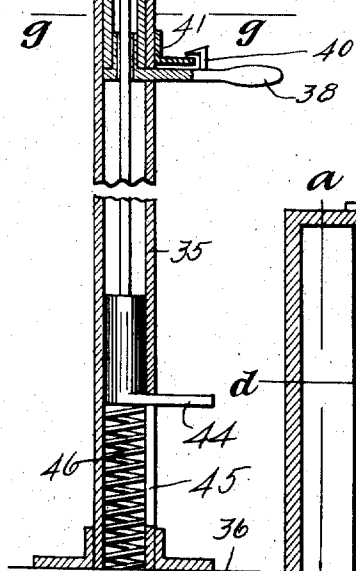


Fig. 4.

Witnesses
M. Sübler
Edward A. Smith

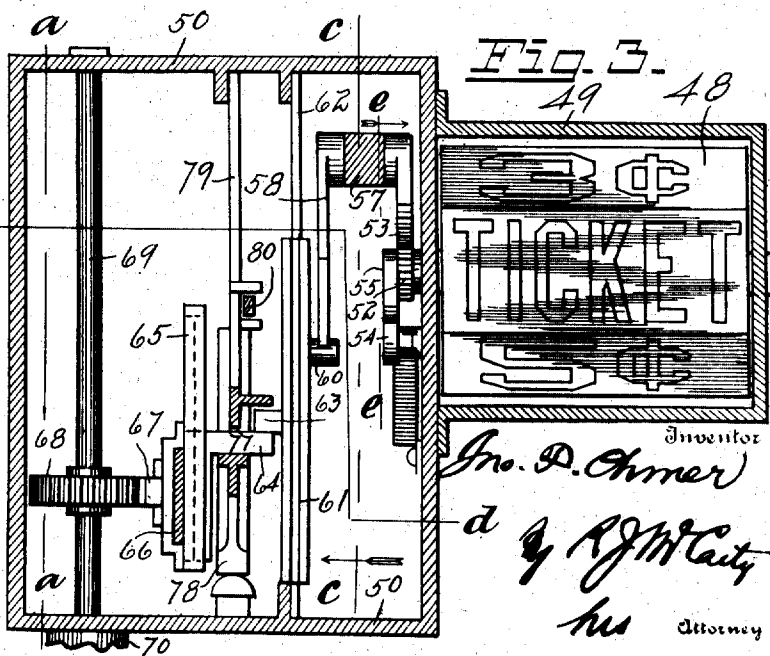
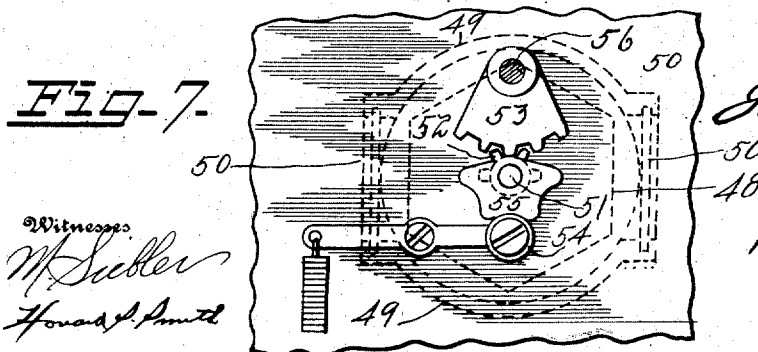
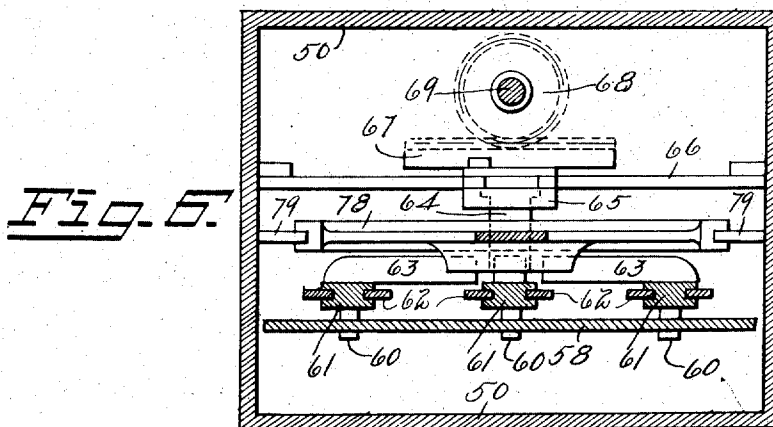
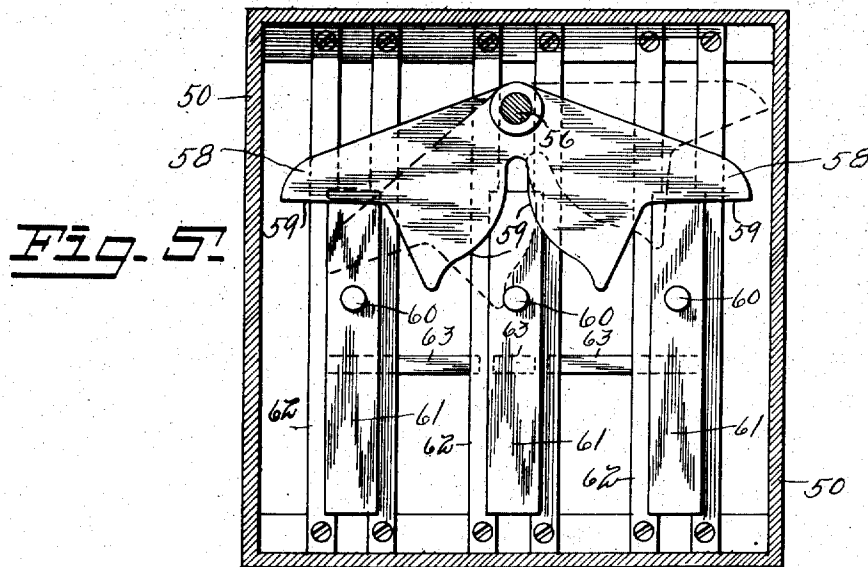


Fig. 3.

Inventor
Jno. D. Ohmer
d by R. J. McCarty
his Attorney

992,381.

5 SHEETS—SHEET 3.



Jos. F. Chmiec,
—50 Inventor

By R. J. W. Larty
his Attorney

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5 SHEETS—SHEET 4.

Fig. 8.

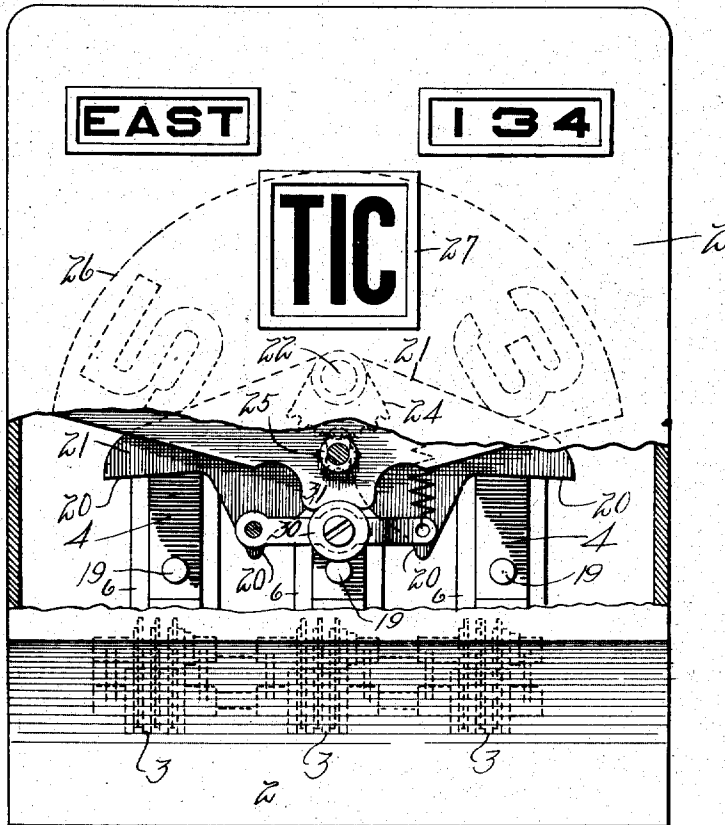
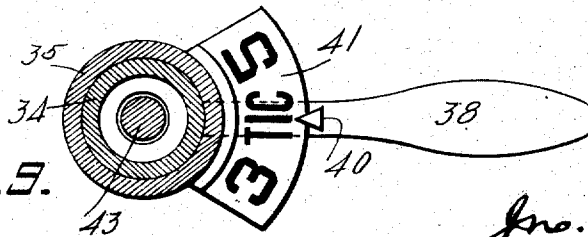


Fig. 9.



Jno. F. Ohmer,
Inventor

Witnesses
M. L. L. L.
Howard A. Smith

By

R. J. McCarty,
his Attorney

J. F. OHMER.
FARE REGISTER AND RECORDER.
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5 SHEETS—SHEET 6.

Fig. 10.

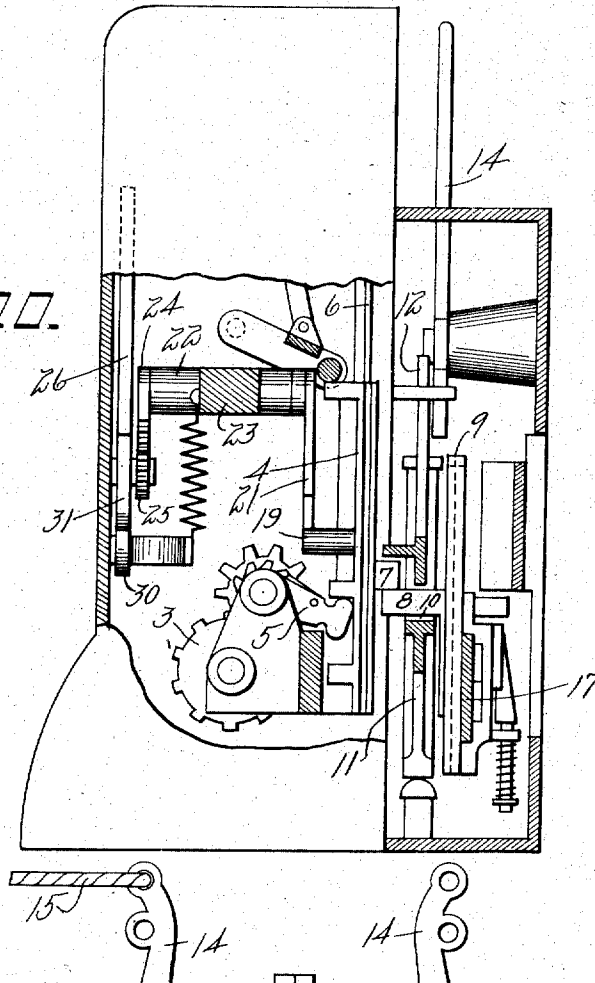
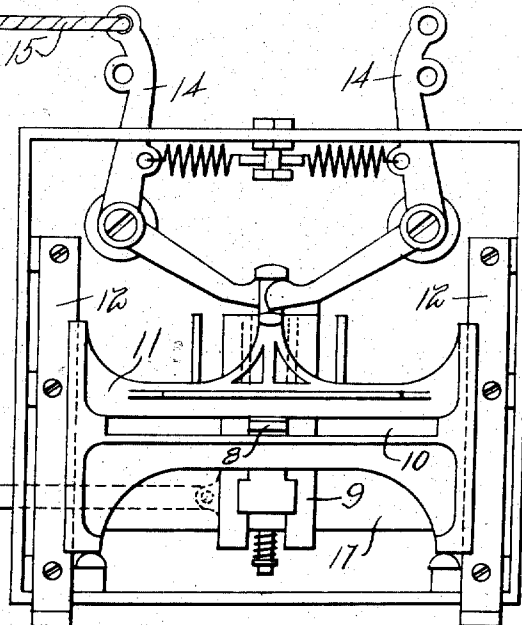


Fig. 11.

Witnesses
M. Sübler
Howard P. Smith



J. F. Ohmer
Inventor

A. R. G. City
his Attorney

UNITED STATES PATENT OFFICE.

JOHN F. OHMER, OF DAYTON, OHIO, ASSIGNOR TO OHMER FARE REGISTER COMPANY,
OF DAYTON, OHIO.

FARE REGISTER AND RECORDER.

992,381.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed January 10, 1910. Serial No. 537,150.

To all whom it may concern:

Be it known that I, JOHN F. OHMER, citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Fare Registers and Recorders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked hereon, which form a part of this specification.

This invention relates to improvements in fare registers and recorders for registering, recording and indicating the fares collected in passenger conveyers such as street cars and the like.

The object of the invention is to provide a fare register having an auxiliary indicator which may be located at a point remote from the register, and which exposes to view, the fare previously registered until the next fare is registered, thereby preventing an improper operation of the machine by the fare collector or conductor. In this connection it may be stated that the invention is more especially adapted for use in cars in which the fares are paid as the passengers enter, otherwise known as "pay as you enter" cars.

In advance of a more detailed description of the invention, reference is made to the accompanying drawings of which—

Figure 1 is an elevation showing the interior of the rear end of a car equipped with my improvements. Fig. 2 is a rear elevation of the auxiliary indicator with the casing removed, or a section on the line *a-a* of Fig. 3. Fig. 3 is a sectional view on the line *b-b* of Fig. 2. Fig. 4 is a longitudinal sectional view through the setting and actuating column. Fig. 5 is a sectional view on the line *c-c* of Fig. 3. Fig. 6 is a sectional view on the line *d-d* of Fig. 3. Fig. 7 is a sectional view on the line *e-e* of Fig. 3. Fig. 8 is a front elevation of the register proper with part of the front casing removed. Fig. 9 is a sectional view on the line *g-g* of Fig. 4. Fig. 10 is a side elevation of the register proper with a portion of the casing removed and the parts ap-

pearing in section. Fig. 11 is a front elevation of the actuating mechanism of the register proper.

Throughout the specification and the drawings similar reference characters indicate corresponding parts.

Fig. 1 shows the interior of the rear end of a "pay as you enter" car in which the mechanism involved in the present invention is shown in a coöperative relation and in which 1 designates the interior of the rear end of the car upon which is supported a register 2 which may be of the type of register shown in some of my former patents, for example Patent No. 890,171 of June 9, 1908. As shown in Figs. 8 and 10 the register consists of a multiplicity of counters 3 for registering different classes of fares, and which are connected to a corresponding number of counter-actuating members 4 through pivotal actuators 5. The members 4 move vertically in guides 6 arranged in alinement therewith and are provided with lugs 7 extending rearwardly, which are engaged by a vertically movable actuator 8 supported upon a carriage 9, said carriage 9 moving horizontally to bring the actuator 8 in position to engage the lugs 7 of any of the members 4. The actuator 8 projects through a slot 10 in a gate 11, which slides on guides 12 (see Figs. 10 and 11). The gate 11 is given vertical reciprocating motion to move the actuator 8, and consequently one of the counter-actuating members 4, and its respective counter, by the movement of one or the other of the bell-crank levers 14 to which is attached a rod or rope 15 that is in turn connected to a foot-treadle hereinafter described. The carriage 9 rides horizontally upon a support or plate 17, and is shifted by a rod 18 to bring the actuator 8 in engagement with the lug 7 to operate any selected counter. The means for setting the carriage 9 at the desired point of its movement will be described in connection with the pedal mechanism through the instrumentality of which the selected counter is actuated. The register 2 may or may not be provided with an indicator. Such indicating mechanism, however, is described as follows: Each counter-actuator 4 is provided with a projection or pin 19 adapted to engage a respective cam surface 20 on a cam-plate 21

mounted on a shaft 22 journaled in a bearing 23. The shaft 22 carries a segment-gear 24 that meshes with a pinion 25 pivoted to the casing of the register and which carries an indicating plate 26. The plate 26 is of semi-circular form and is provided with a number of indications which correspond with the number of counters 3, each indication representing the fare value of its respective counter. The indications on said plate may be viewed through a sight opening 27 in the casing (see Fig. 8), and the indication thus exposed to view shows the fare or counter previously operated. It will be seen that upon the operation of any one of the counter-actuators 4, one of the pins 19 will engage its respective cam surface 20, and the cam-plate 21 and the indicating-plate 26 will be shifted to expose the indication corresponding to the counter actuated. The indicating plate 26 is held in this position until another counter is actuated, by a spring-controlled roller 30 engaging serrations 31 on the plate 26.

As before stated, the carriage 11 is shifted by means of a rod 18 attached to a crank 33 on a vertical tubular member 34. (see Figs. 1 and 4). The member 34 is journaled in a stationary tubular member 35 attached at its bottom to the floor 36 of the car, and at its upper end said tubular member 35 is attached to the car by means of braces 37. The said tubular member 34 is provided at its lower end with a handle 38 which is preferably located within convenient reach and extends through a slot 39 in the side of the tubular member. The handle 38 is provided with a pointer 40 which indicates on a semi-circular dial 41 the respective counter 3 at which the actuator 8 is set (see Figs. 1 and 9).

The rod or rope 15 hereinbefore referred to in connection with Fig. 11, is connected to a bell-crank lever 42 mounted on the interior of the car in proximity to the register, or at any other suitable point. The said bell-crank lever 42 has one of its arms also connected to a rod 43 which extends downwardly on the inside of the telescope members 34 and 35. On its lower end the rod 43 is provided with a foot-treadle 44 which projects through a slot 45 and lies on the outside of the tubular member 35. A spring 46 normally holds the treadle 44 in an upper position. When the conductor wishes to register a fare, he turns the handle 38 until the pointer 40 indicates on the dial 41 the particular fare to be registered. This operation places the actuator 8 opposite the respective counter 3 corresponding to the indication on the dial 41. He then places his foot on the treadle 44 pressing the same downwardly. This movement of the treadle actuates the gate 11 through the rod 43, bell-crank lever 42, rod or cord connection 15,

bell-crank lever 14, and thereby elevates the actuator 8 and the counter-actuator 4 of the selected counter.

While I have shown in the drawings an indicator connected with the register, which shows the fare previously registered and which is exposed to view until a different fare is registered, I do not wish to limit myself to this arrangement, as the register may be placed within the car, or if placed on the rear platform the indicator may be eliminated. In this case an auxiliary indicator is provided as follows: (see Figs. 1, 2, 3, 5, 6 and 7). The auxiliary indicator referred to is designated by 48 and the same is mounted in a casing or housing 49 attached to a casing 50 in which the actuating mechanism is mounted. The said indicator 48 is provided with suitable indications which are exposed to view through sight openings 50', and is mounted on a shaft 51 provided with a pinion 52 meshing with a segment gear 53. As shown in Fig. 7 a spring-controlled roller 54 engages a serrated segment 55 on the shaft 51 and holds the indicator 48 in any of its exposed positions. The segment-gear 53 is mounted on a shaft 56 journaled in bearings 57 and provided with a plate 58 having cam surfaces 59. The said surfaces 59 are adapted to be engaged by pins 60 on slides 61, there being one of such slides for each fare that may be indicated and registered. The slides 61 are mounted in guides 62 and are provided on their rear sides with lugs 63, the outer ones of which extend inwardly as shown in Figs. 5 and 6. The lugs 63 are adapted to be engaged by a vertical sliding actuator 64 mounted on a horizontal sliding carriage 65. The carriage 65 is shifted horizontally to bring the actuator 64 in engagement with any one of the lugs 63 by the following mechanism. Mounted on the rear of the carriage 65, which slides on a plate 66, is a rack 67 meshing with a gear 68 on a vertical shaft 69 journaled in the casing 50 as shown in Fig. 1. On its lower end, this shaft is provided with a miter gear 70 meshing with a similar gear 71 on a shaft 72. On the end of the shaft 72 opposite the gear 71 is a miter gear 73 in mesh with a miter gear 74 on the vertical tubular member 34. When the conductor selects the fare to be registered by rocking the handle 38, the carriage 65 is moved to a position to allow the actuator 64 to engage the lug 63 of the slides 61 corresponding to the fare indicated on the dial 41. When the actuator 63 is moved vertically the fare indicated on the dial 41 will appear on the indicator 48 at the sight openings 50'. The actuator 64 is operated as follows. The said actuator 64 projects through an elongated horizontal opening 77 in a gate 78 which slides on guides 79 attached to the casing 50. The gate 78 is

movable vertically by a lever 80 pivoted at 81 and extending outwardly on either side of the casing 50 where it is attached to the rod 43 operated by the foot-treadle 44 as hereinbefore described. When the conductor presses on the foot-treadle to register a fare, the actuator 64 moves the slide 61 corresponding to the fare to be registered, and the pin 60 on said slide will engage its respective cam surface 59 on the plate 58. If the central slide 61 is actuated, the plate 58 will be thrown to its position shown in full lines in Fig. 5, and if the slide to the right is actuated, the plate will be thrown to its position shown in dotted lines.

The configuration of the cam surfaces 59 are such that the receding pins 60 will leave the plate 58 in the position to which it is thrown, as a consequence the indicator 48 will be held in its set position by the roller 54 until a fare of a different denomination is registered. Owing to the indicator 47 being held in its position until another fare is registered, the conductor is prevented from setting the machine to register a fare of low denomination, and then immediately after registering said fare of low denomination, setting the machine to register a fare of a high denomination which he has collected.

The register may be located on the rear platform or at a convenient point within the car, and at the same time the auxiliary indicator may be located on the rear platform by running the setting and operating means through the walls of the car to connect with the auxiliary indicator, and likewise two or more auxiliary indicators may be connected to the operating means and whereby the fare registered on any particular counter may be simultaneously indicated plurally at different places within the car and on the platform thereof.

Without limiting myself to the precise arrangement and details shown and described herein, I claim:

1. In a fare register, a plurality of counters, means for actuating any selected counter, an indicator remote from the counters and adapted to exhibit the fare previously registered, and means whereby said indicator is held in one position until a counter of another fare denomination is actuated.

2. In a fare register, a plurality of counters, means for actuating any selected counter, an indicator remote from the counters and adapted to indicate the fare previously registered, and means whereby said indicator is held in one position until a fare of another denomination is registered.

3. In a fare register, a plurality of counters, setting mechanism by means of which the counters are selected, actuating mechanism by means of which the selected counters are actuated, an indicator remote from said

counters, setting mechanism for said indicator, actuating mechanism for said indicator, means adapted to actuate said counter-setting mechanism and said indicator-setting mechanism concurrently, and means adapted to actuate said counter-actuating mechanism and said indicator-actuating mechanism concurrently.

4. In a fare register, a plurality of counters, selecting and actuating means for said counters an indicator remote from said counters, a series of actuating members, one for each counter, said actuators being adapted to move the indicator, selecting and actuating mechanism for said members, and means whereby the selecting and actuating mechanism for the counters is operated concurrently with the selecting and actuating mechanism for said actuating members of the indicator.

5. In a fare register, a series of counters, an indicator remote from said counters, a cam-plate operatively connected with said indicator, and means for actuating one of said counters and the indicator concurrently.

6. In a fare register, a series of counters, an indicator remote from said counters, a cam-plate operatively connected to said indicator, a series of actuating members, one for each counter, the said actuating members being adapted to engage said cam-plate to move the indicator, an actuator for said counter-operating members, and means adapted to set and to actuate said counters and their actuating members concurrently.

7. In a fare register, a series of counters, an indicator remote from said counters, a cam-plate operatively connected to said indicator, counter-actuators, one for each counter, said actuators being adapted to engage the cam plate to set the indicator, an actuator for said counter operating members, a carriage upon which said actuator is mounted, a rack upon said carriage, a gear in mesh with said rack, means for rotating said gear to set said actuator, and means adapted to operate said actuator and any one of said counters to indicate on said indicator the particular fare registered.

8. In a fare register, a plurality of counters, an indicator remote from said counters, setting mechanism for said counters and said indicator, actuating mechanism for said counters and said indicator, a foot-treadle adapted to operate said actuating mechanism, and means whereby any one of the counters may be actuated, and an indication corresponding to said counter exposed on said indicator.

9. In a fare register, a plurality of counters, an indicator remote from said counters, setting mechanism for said counters and indicator, actuating mechanism for said counters and indicator, a stationary vertical tubular member, an inner tubular member

telescoped within said stationary member, means adapted to rock said inner tubular member, connections between said inner tubular member and the setting mechanism, and a foot-treadle connected to said actuating mechanism.

10. In a fare register, a plurality of counters, an indicator remote from said counters, setting mechanism for said counters and indicator, actuating mechanism for said counters and indicator, a stationary vertical tubular member, an inner tubular member telescoped within the stationary member, connections between said inner tubular member and the setting mechanism, a reciprocating member within said tubular member, a treadle connected with said reciprocating member, and connections between said reciprocating member and the actuating mechanism.

11. In a fare register, a plurality of counters, an indicator remote from said counters, setting mechanism for said counters and indicator, actuating mechanism for said counters and indicator, a stationary vertical tubular member, an inner rocking tubular member, connections between said inner tubular member and said setting mechanism, means mounted on said stationary and said inner tubular members whereby the position of the setting mechanism may be ascertained, and a treadle adapted to operate the actuating mechanism for the counters and indicator.

12. In a fare register, a plurality of fare counters each one of which is adapted to register a different class of fares, an indicator to exhibit at the register the fares of any particular counter, auxiliary indicators to exhibit the fares of the counters at more remote points, means for selecting a counter to be actuated, and means for simultaneously actuating the counter selected, and indicating the fare of such counter on all of the indicators.

13. In a fare register, a plurality of fare counters, an indicator at the register and auxiliary indicators upon which may be indicated the fares of said counters, means for selecting a counter to be actuated, and means for simultaneously actuating the selected counter and indicating the fare of such counter upon all the indicators.

14. In a fare register, a plurality of fare counters each one of said counters being adapted to register a definite class of fares, an indicator located on the outside of the register to indicate the fare of any counter,

means for selecting a counter to be operated, and means for simultaneously actuating the selected counter and the indicator.

15. In a fare register, a plurality of fare counters adapted to register different classes of fares, an indicator at the register and an indicator remote from the register to indicate the fares of any of said counters, an auxiliary indicator to guide the operator in selecting a counter, means for selecting a fare counter to be actuated, and means for simultaneously actuating the selected counter, the indicator at the register and the indicator remote from the register.

16. In a fare register, a plurality of fare counters for different specific fares, an indicator to indicate at the register the fares of said counters, auxiliary fare indicators, means for selecting a fare counter to be actuated, and means for simultaneously actuating the selected counter and indicating the fare of such counter on all the indicators.

17. In a fare register, a plurality of fare counters for different specific fares, a plurality of indicators to indicate plurally the fares of said counters, means for selecting a fare counter to be actuated, and means for simultaneously actuating the selected counter and indicating the fare of such counter on all the fare indicators.

18. In a fare register, a plurality of fare counters for different specific fares, a plurality of indicators to indicate plurally the fares of said counters, an auxiliary indicator bearing indications to guide the operator, said indications denoting the fare of the counter to be operated, means for selecting the counter to be operated, and means for simultaneously actuating the selected counter and indicating the fare of such counter on all the indicators.

19. In an operating mechanism of the character described, the combination with two longitudinal movable operating rods, of two telescoping shafts rotatable relatively one to the other, means for operatively connecting each of said shafts with one of said operating rods, an actuating handle connected to one of said shafts, and a foot lever operatively connected to the other of said shafts.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN F. OHMER.

Witnesses:

MATTHEW SIEBLER,
HOWARD S. SMITH.