(No Model.) 2 Sheets—Sheet 1.

W. A. CROWDUS.

FARE BOX.

No. 382,756. Patented May 15, 1888.

Fig. 2

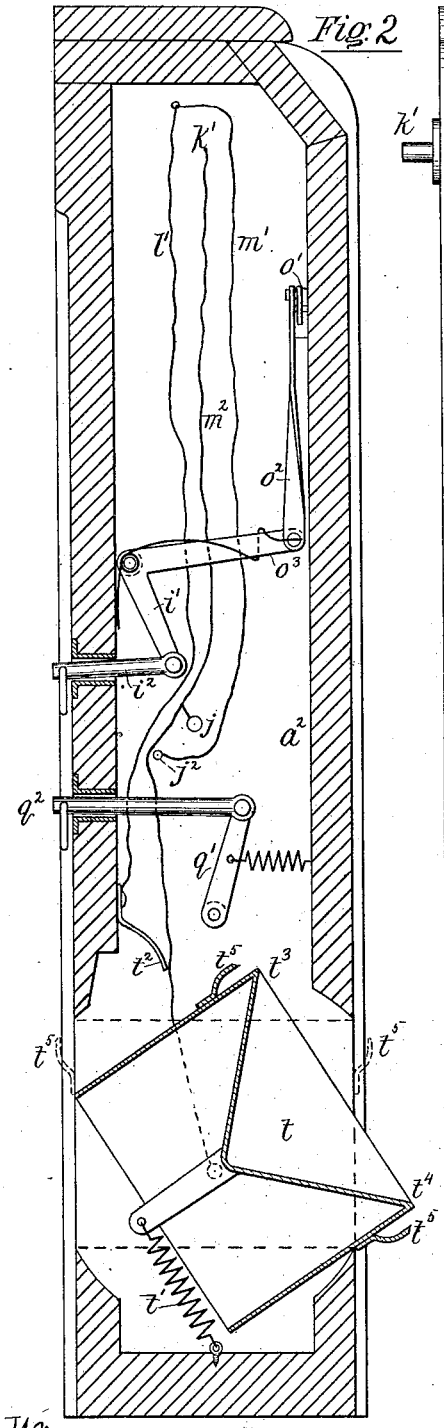
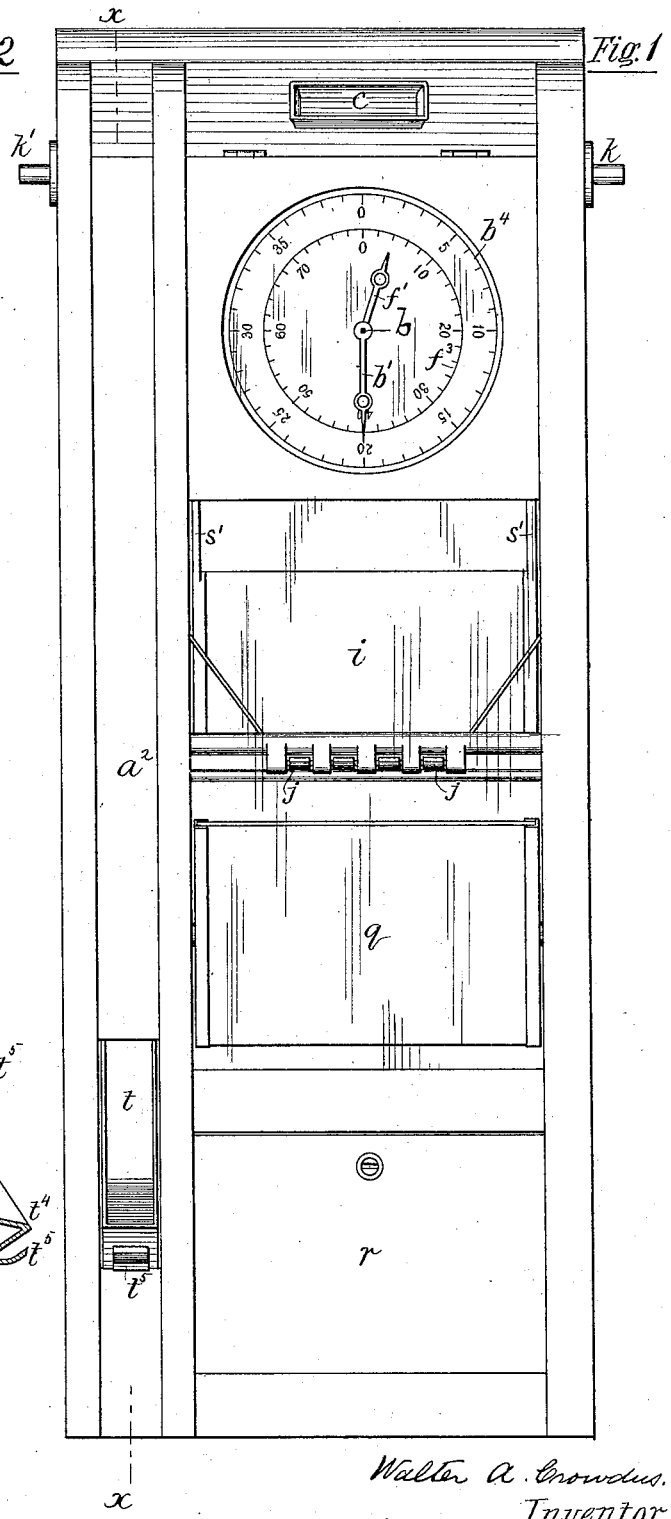


Fig. 1



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

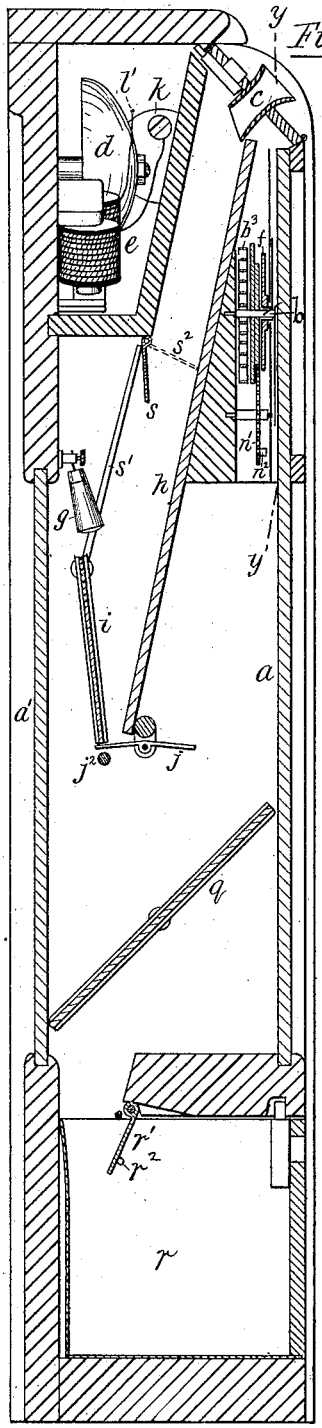


Fig. 4

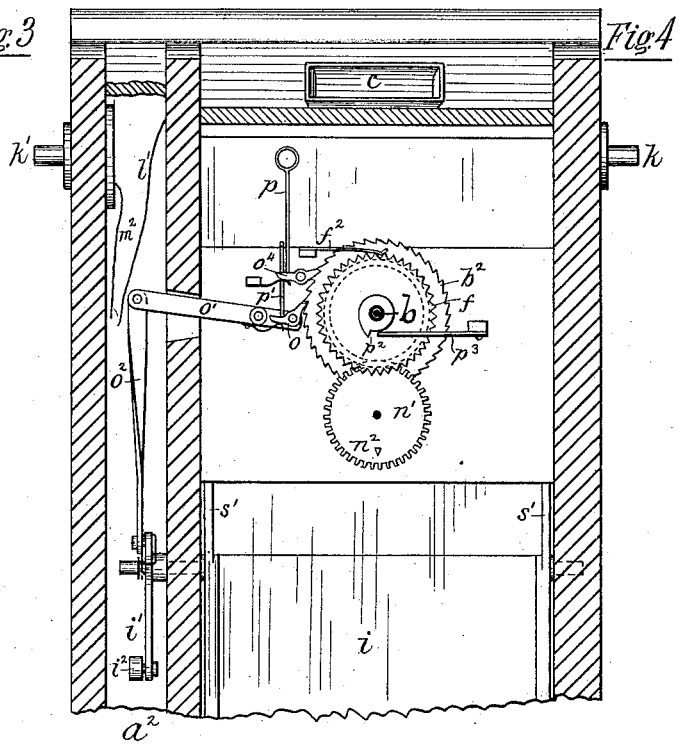
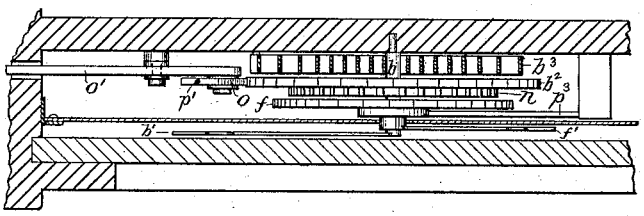


Fig 5



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UNITED STATES PATENT OFFICE.

WALTER A. CROWDUS, OF DALLAS, TEXAS.

FARE-BOX.

SPECIFICATION forming part of Letters Patent No. 382,756, dated May 15, 1888.

Application filed August 3, 1887. Serial No. 246,002. (No model.)

To all whom it may concern:

Be it known that I, WALTER A. CROWDUS, a citizen of the United States, residing at Dallas, county of Dallas, State of Texas, have invented certain new and useful Improvements in Electrical Fare-Boxes, of which the following is a specification.

United States Letters Patent No. 357,372, granted to me on February 8, 1887, for improvements in street-car fare-boxes, embody certain electrical devices combined with improved mechanical means by which the efficiency and subserviency of fare-boxes are increased.

This invention aims to attain greater perfection in these directions; and it consists, first, in substituting for the push-button actuated by the passengers to ring the electric bell when change is required a circuit-closing device consisting of a narrow trough fitted in the box adapted to be operated from both sides of the box and to receive money from the passengers' side and transfer it to the driver's side, and reverse the operation with the change given by the driver; secondly, in operating a fare-register by means of the actuating device of the plate which releases the deposited fares from the balanced circuit-closers or fare-announcer, so that each time said plate is moved to release a fare therefrom the register is actuated; thirdly, of a trap located in the chute down which the fares slide to the fare-announcer, said trap being operated from the plate which holds the fares thereon, so as to close the chute and prevent other fares from falling on the fare-announcer while said plate is being moved to release the fares therefrom, all of which, with other minor improvements, will be now fully described, reference being had to the accompanying drawings.

Figure 1 is an elevation of the side of the box facing the interior of the car. Fig. 2 is a vertical section cut on the line *x x*. Fig. 3 is a central vertical section. Fig. 4 is a sectional view of the upper part of the box cut on the line *y y*, Fig. 3; and Fig. 5 is an enlarged horizontal section of the fare-register.

The fare-box is similar in construction to that shown in my before-mentioned Letters Patent No. 357,372, and all parts thereof that it is necessary to describe in conjunction with the new devices forming the subject of this invention are designated in the drawings accompanying this specification by similar letters of reference, to which I will refer before describing what is new.

The plate of glass *a* covers the front or car side, and the plate of glass *a'* the rear or driver's side of the box. One end of the box a^2 is double, forming a chamber in which is placed the lever *i'*, connected to the shaft of the glass plate *i*. This plate *i* extends across the interior of the box and holds the fares upon the fare-announcer or electric-circuit-closing fingers *j*, which are pivoted at the bottom of the chute, one side of which chute is formed by the glass plate *h*, and the other side by the plate *i* and the side of the receptacle holding the bell *d* and electro-magnet *e*. The pull-rod i^2 is connected to the lever *i'*, and extends through the driver's side of the box. The lever *q'* is attached to the shaft of the trap *q*, upon which the fares are dropped from the fingers *j*, and the pull q^2 is connected to the lever *q'* and extends through the driver's side of the box.

c represents the slit through which the fares are deposited into the box.

k and *k'* are studs forming the electrical terminals; *g*, the small glow-lamp; *r*, the money-drawer at the bottom of the box, and *l'* and m^2 lines joined to the electro-magnet *e* and the terminal *k'*, forming a circuit which in the said patent is closed by an ordinary push-button, thereby causing the call-bell to ring and attract the driver's attention, but which in this invention is closed by a new device to be hereinafter described; and *m'*, a line joining the contact-rod j^2 of the fare-announcer to the electro-magnetic bell *e*. These are the only electrical connections it is necessary here to show to enable a full understanding of the present improvements to be had.

The fare-register is placed in the narrow space at the upper part of the box between the glass plate *a* and the side *h* of the chute. It is especially designed for this fare-box, and has but little depth, as this space, the only available part of the box for the purpose, is very limited, and it is operated from the pull i^2, which the driver actuates for each fare deposited in the box. This register has a cen-

tral shaft, b, to which the pointer b' and ratchet-wheel b^2 are connected, and on which the wheel f, carrying the pointer f', is fitted to rotate. One end of the spring b^3 is also fastened to the shaft b, the other end being secured to the frame of the register. The ratchet-wheel b^2 carries the wheel n, which meshes into the wheel n', provided with a tooth, n^2, arranged to act on the wheel f so as to move it one tooth each time the wheel b^2 makes a full revolution.

The means for conveying motion to the register from the pull i^2 consists of the spring-pawl o, the lever o', to one end of which it is pivoted, and the link o^2, connecting the other end of the lever o' to the arm o^3, connected to or forming a part of the arm i'. This arm i' is fastened to the shaft of the plate i, which holds the fares on the balanced fingers j so that they come in contact with the rod j^2, thereby closing the bell-circuit by means of the lines m' m^2.

o^4 is a retention-pawl acting on the wheel h^2, and f^2 a retention device for the wheel f.

The dial is provided with two concentric divided circles, the outer one, b^4, indicating the number of fares, and the inner one, f^3, the amount of money in dollars corresponding to the number of fares represented by one full movement of the pointer b' around the circle b^4. These circles may be made to indicate any amounts of fares and money desired.

In the drawings, b^4 represents forty fares, which, at five cents each, will be two dollars, this being the amount represented by each division of the circle f^3.

At the end of each day, or at other selected times, after an account has been taken of the fares indicated by the register, it is required to set it back to zero. This the collector does by moving the arm p, which projects upwardly from the retention-pawl o^4, and to which he has access upon opening the hinged cover carrying the slit c toward the left, thereby moving the pawl clear of the wheel b^2, and at the same time throwing the pawl o back by the action of this arm p on the arm p', which projects from the pawl o. This allows the spring b^3 to react on the shaft b, it having been gradually wound up by the action of the pawl o upon the wheel b^2, thus turning the wheels b^2 and f, with their respective pointers, backward until stopped by contact of the projecting tooth p^2 on the side of the wheel f with the stop p^3.

To avoid liability of mistake by the driver in the registration of fares, a hinged trap, s, is located in the chute and is raised up to close the chute by the arms s', extending from the fare-releasing plate i, when this plate is actuated by the driver to drop a fare from the fingers j, so that if another fare be deposited in the box during such time it will be retained on the trap s until the driver allows the plate i to close the bottom of the chute, thus preventing such fare from passing through the chute without the cognizance of the driver. The dotted lines s^2 show the closed position of this trap s.

The device for facilitating the transfer of bills or coins requiring to be changed from the passengers to the driver, and the change therefor from the driver to the passengers, consists of the narrow triangular trough t, pivoted in the lower end of the double side a^2 and held in its normal position (shown by dotted lines in Fig. 2) by the spring t', in which position it closes the openings on both sides of the box. The wire l' from the spring contact-piece t^2, which is located in the path of the top edges of the ends of the trough t, is connected to the coils of the electro-magnet e, the other end of which is joined to the terminal k, and the wire m^2 connects the trough t to the other terminal, k'. Now, when a passenger moves the trough into the position shown in Fig. 1, and by the full lines in Fig. 2, and places the bill or coin for which he requires change in the trough, and then releases it, the spring t' moves it into its normal position, the edge t^3 closing the circuit each time it passes the spring-contact t^2, thus causing the electric bell to act and attract the driver's attention. The driver then swings the trough over through his side of the box, substitutes the full change for the bill or coin, and allows the trough to again assume its normal position, the bell-circuit being by such actions closed by the edge t^4 coming in contact with the spring t^2. The passenger then removes the change from the trough and deposits the amount necessary for his fare in the slit c. The handles t^5 t^5 provide means for operating the trough.

To prevent tampering with or removal of the money deposited in the drawer r, a trap, r', is hinged to one side of the opening through which the money enters the drawer, and is held in an inclined position by the pin r^2 projecting from the side of the drawer, so that if the box is tipped ever so little in an endeavor to cause the money to slide out of the drawer through the opening said trap immediately closes the opening.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a fare-box, in combination, a chute down which the fares are dropped, an electro-magnetic bell, balanced fingers at the bottom of the chute provided with electrical connections for closing the bell-circuit, a pivoted plate for holding the fares on the fingers, provided with an operating-lever, a fare-register, and mechanism connecting the lever of the pivoted plate to the register, substantially as and for the purpose set forth.

2. The combination, with a fare-box provided with an opening extending through it, of a trough pivoted centrally in the opening and normally closing both sides of the same, adapted to be moved so as to open only one side at a time, and a spring connected to the trough to normally hold it in central position.

3. In a fare-box, in combination, a trough pivoted therein and adapted to be moved so as to project through openings in two opposite sides of the box, a spring connected to the trough to cause it to normally close both openings, an electro-magnetic bell, a contact-spring, and lines connecting the trough, contact-spring, and electro-magnetic bell in an electric circuit, substantially as set forth.

4. In a fare-box, in combination, a chute down which the fares are dropped, a pivoted plate normally closing the lower side of the chute, a hinged trap located in the upper part of the chute normally open, and an arm projecting from the pivoted plate, whereby the trap is positively operated to close the chute when the pivoted plate is actuated to drop the fares from the lower end of the chute.

5. In a fare-box, in combination, a chute down which the fares are dropped, an electro-magnetic bell, balanced fingers at the bottom of the chute provided with electrical connections for closing the bell-circuit, a pivoted plate for holding the fares on the fingers, provided with an operating-lever, a hinged trap located in the chute, and means, substantially as described, for causing the trap to close the chute when the pivoted plate is actuated to drop the lower end of the chute.

6. In a fare-box, in combination, a pivoted fare-retaining plate, a fare-register, a chute for directing the fares to the retaining-plate, which normally closes the lower end of the chute, a hinged trap in the upper end of the chute normally open, and means, substantially as described, whereby the fare-register is operated and the hinged trap positively closed when the retaining-plate is actuated to drop a fare.

Signed at New York, county and State of New York, this 1st day of August, 1887.

WALTER A. CROWDUS.

In presence of—
H. D. WILLIAMS,
T. E. TOMLINSON, Jr.