

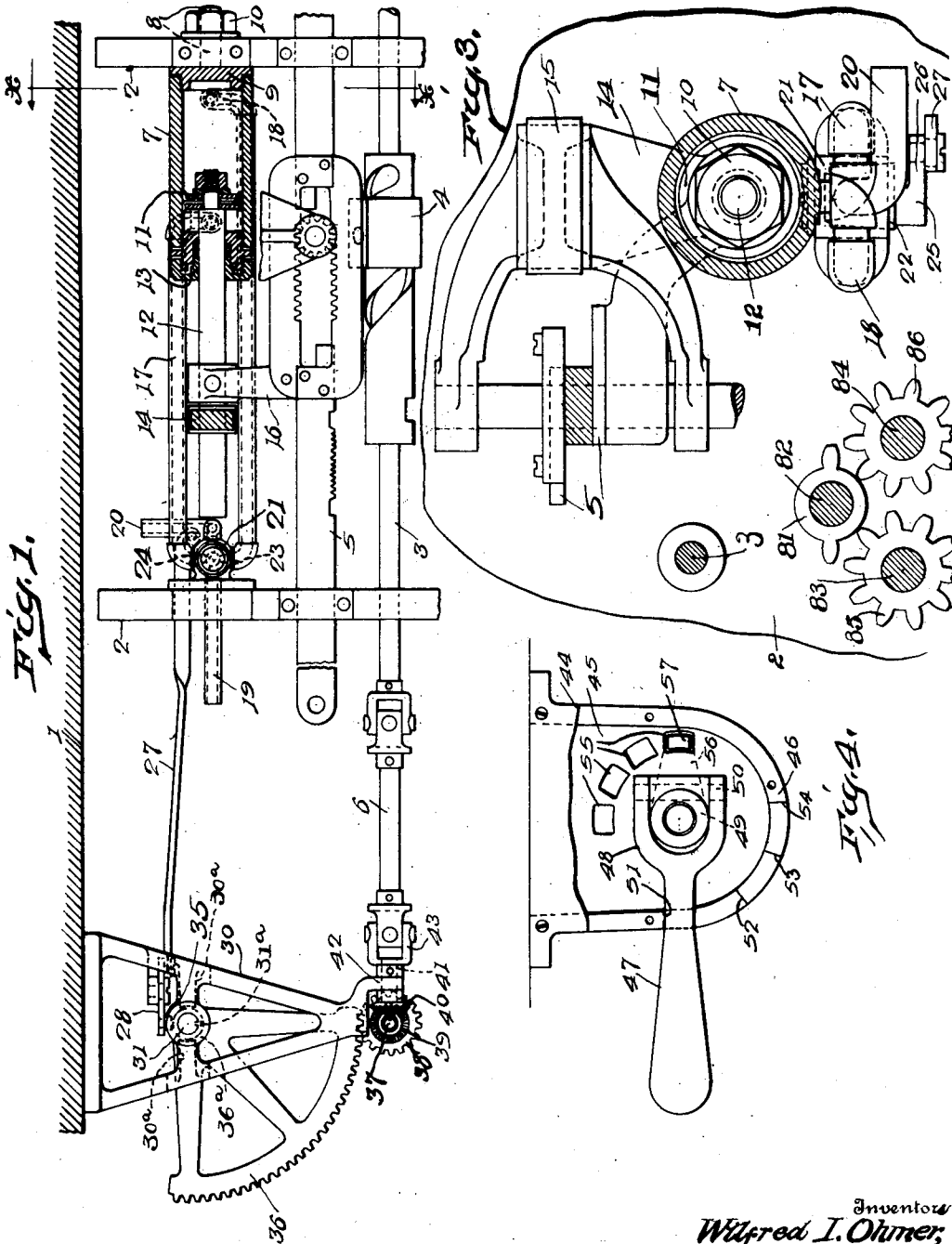
W. I. OHMER, D. B. WHISTLER & J. E. McALLISTER.  
 OPERATING MECHANISM FOR REGISTERS.

APPLICATION FILED JUNE 4, 1909.

999,848.

Patented Aug. 8, 1911.

3 SHEETS—SHEET 1.



Witnesses

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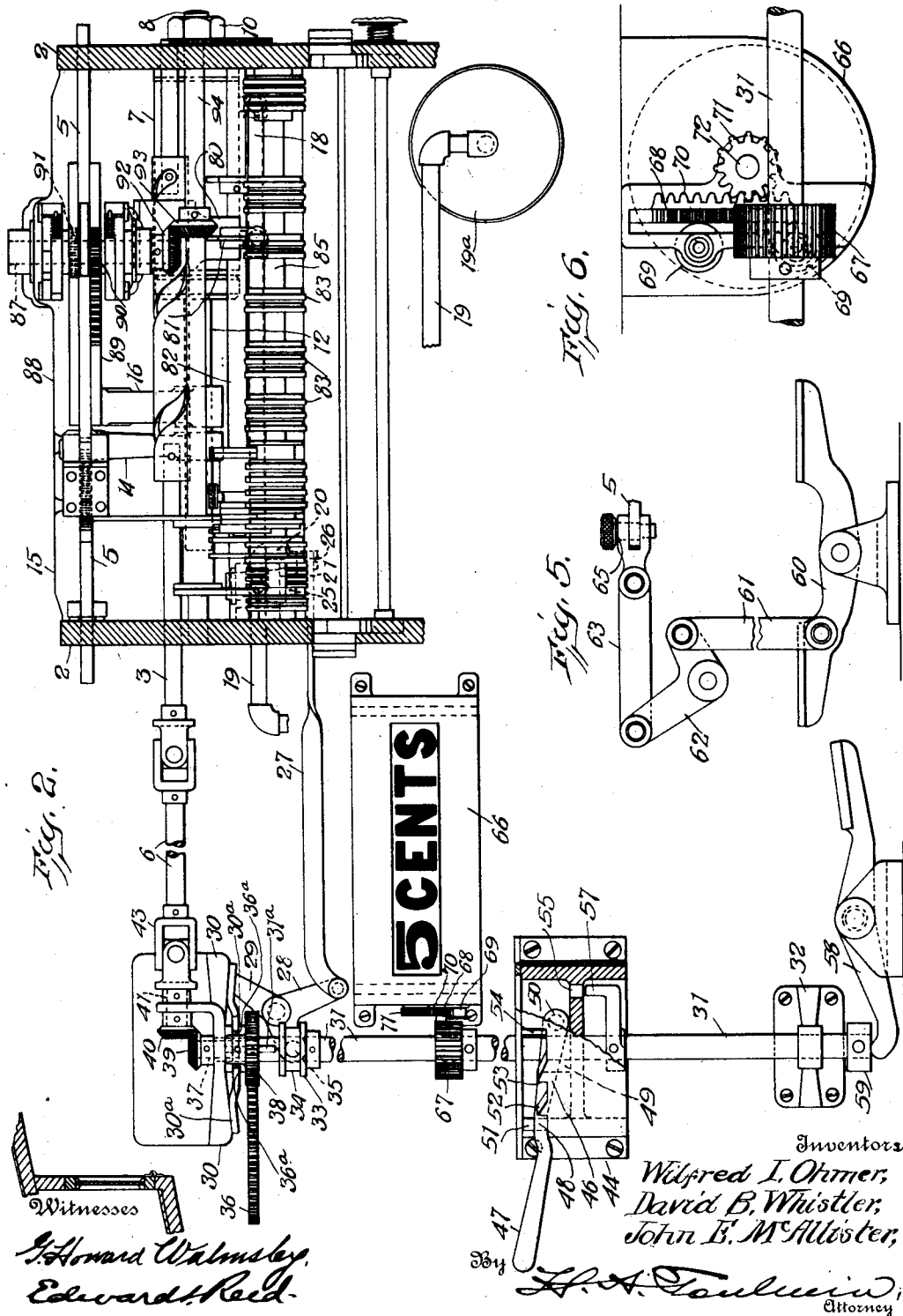


Fig. 2.

Fig. 5.

Fig. 6.

Witnesses

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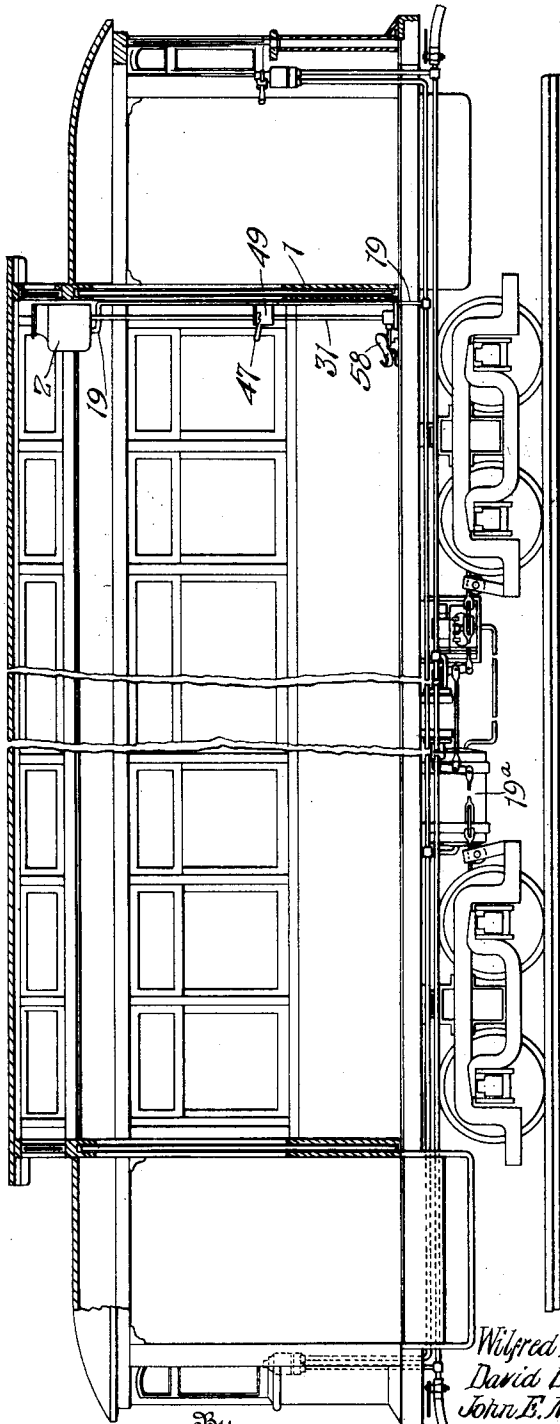
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3 SHEETS-SHEET 3.

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*Fig. 7.*

Witnesses

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# UNITED STATES PATENT OFFICE.

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## OPERATING MECHANISM FOR REGISTERS.

999,848.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed June 4, 1909. Serial No. 500,143.

*To all whom it may concern:*

Be it known that we, WILFRED I. OHMER, DAVID B. WHISTLER, and JOHN E. McALLISTER, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Operating Mechanism for Registers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to operating mechanism for registers, and more particularly to operating mechanism for fare registers employed in street cars of that type in which the fares are all collected and registered at one place.

The object of the invention is to provide an operating mechanism of this character having power driven mechanism for actuating the register to register a fare; and having means arranged within reach of the conductor, or other operator, for actuating the setting mechanism to set the machine to register a particular fare and for controlling the power driven mechanism which actuates the machine to register the fare.

A further object of the invention is to provide a mechanism of this character which will be very simple in its construction, easy of operation and which will not be liable to become disarranged or to be rendered inoperative.

Another object of the invention is to provide a register, having an indicator arranged at a point removed therefrom, with an actuating member adapted to control the setting mechanism, the indicator and the operating mechanism.

With these and other objects in view our invention consists in certain novel features and in certain combinations and arrangements of parts hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a portion of a fare register showing our invention applied thereto; Fig. 2 is a side elevation of the same showing the operating mechanism in elevation and the register in section; Fig. 3 is a transverse section taken on the line *x x* of Fig. 1 and looking in the direction of the arrows; Fig. 4 is a top plan view of the actuating

handle; Fig. 5 is a detail view of a modified form of operating mechanism; Fig. 6 is an end elevation of the indicator drum and its actuating mechanism, and Fig. 7 is a longitudinal, sectional view of a car showing our invention applied thereto.

In these drawings we have illustrated one embodiment of our invention and have shown the same applied to a register, which, in the present instance, is mounted on the front wall 1 of a street car. This register comprises a frame consisting of two end members 2 and is provided with suitable setting mechanism, here shown as comprising a screw-shaft 3 journaled in the end members 2 of the frame and having a carriage 4 mounted on the screw-threaded portion thereof and operatively connected by means of a yoke 80 with an actuating member, such as a gear 81, mounted on a shaft 82 and arranged to actuate the counters 83 and 84 on the resetting shafts 85 and 86. The register is also provided with suitable means for actuating the registering mechanism to register a fare and this means is here shown as a bar 5 slidably mounted in the opposite end walls 2 of the main frame and operatively connected to said registering mechanism, whereby the reciprocation of said rod will actuate said registering mechanism.

In the form of register here shown the slide bar 5 is provided with two racks 88 and 89 adapted to mesh with pinions 90 and 91 connected with the shaft 87 by oppositely arranged clutch mechanism, whereby the shaft will be rotated in opposite directions by the two movements of the slide bar. The shaft 87 has at its lower end a bevel pinion 92 meshing with a corresponding pinion 93 on a shaft 94 journaled in the frame members 2 and connected by means of suitable gears with the shaft 82 carrying the actuating gear 81. Thus, it will be apparent that the rotation of the screw shaft 3 will move the actuator into operative relation with one of the groups of counters 83 and that the reciprocation of the slide bar 5 will rotate the shaft 82 and actuator 81 to actuate that particular group of counters to add one to the count thereof.

Inasmuch as the register as a whole does not enter into the present invention we have shown only such parts thereof as enter into

the operation of our invention. A register of the type herein shown may be found in the application for patent filed by us May 3, 1909, Ser. No. 493,586. It will be understood, however, that this particular type of register is employed for the purpose of illustration only and that the invention can be applied to registers radically different therefrom.

10 The setting means or screw-shaft 3 is connected by means of a rod 6 with suitable operating mechanism, as will be hereinafter described. In order to facilitate and expedite the operation of the actuating means or slide bar 5 suitable power driven mechanism is connected thereto. This power driven mechanism, in the present instance, consists of a fluid pressure cylinder 7 mounted between the end members 2 of the frame and rigidly secured to one of said end members by means of a bolt 8 secured to one of the cylinder heads 9 of the cylinder, extending through the adjacent end member 2 and provided with a nut 10 for securing the same firmly to the end member. The cylinder 7 is of a length considerably less than the distance between the two end members of the main frame and is provided with a piston 11 and piston rod 12 which extends through the cylinder head 13 which closes that end of the cylinder opposite the end connected to the end member of the frame. The piston rod 12 extends for a considerable distance beyond the end of the cylinder 7 and is slidably mounted in a bracket or apertured arm 14 carried by one of the connecting members 15 extending between the end members 2 of the frame. The piston rod 12 extends substantially parallel with the slide bar 5 and is rigidly secured thereto by means of an arm 16 having its opposite ends secured respectively to the piston rod and to the slide bar. The fluid pressure cylinder may be operated from any suitable source of power, but, inasmuch as a large portion of the cars employing registers of this character are equipped with air brakes, the most convenient source of power is the air brake system and we have, therefore, shown the cylinder 7 as having connected thereto, on the opposite sides of the piston 11, pipes 17 and 18 adapted to serve alternately as inlet and exhaust pipes. These pipes, in the present arrangement, extend substantially parallel with the cylinder and are connected at the ends removed from the cylinder with a supply pipe 19, which is connected with the source of air supply, and an exhaust 20. The connection between the supply pipe and exhaust and the inlet and outlet pipes is made by means of a valve 21 mounted on one of the end members of the frame, which valve is here shown as of the turn-plug type and has a plug 22 provided with openings 23 and 24 so arranged that, when the turn-plug is in one position, the supply pipe 19 will be connected to the pipe 18, which then serves as an inlet pipe, and the exhaust pipe 20 will be connected with the pipe 17 which will then serve as an outlet pipe for the cylinder. When the valve plug 22 is turned to its other position, the pipe 18 will be connected with the exhaust and the pipe 17 with the supply pipe 19, thus reversing the movement of the piston within the cylinder. The turn-plug is provided at its lower end with a stem 25, to which is rigidly secured an arm 26 by means of which the valve will be operated.

Suitable means are arranged within reach of the operator or conductor for manipulating the arm 26 to actuate the valve and control the movement of the piston in the cylinder 7. This means, in the present instance, consists of a connecting rod 27 having one end secured to the arm 26 and its other end secured to one arm of a bell crank lever 28, which is pivotally mounted on an arm 29 carried by a bracket 30 mounted on a fixed support, such as the end wall 1 of the car. A shaft 31, which, in the present instance, is vertically arranged, is rotatably and reciprocally mounted in suitable bearings arranged near the end of the car, one of these bearings being formed in the bracket 30 and another in a bracket 32 arranged near the floor of the car. This shaft is provided at a point a short distance beneath the bracket 30 with a collar 33 rigidly secured thereto and having an annular groove 34. The bell crank lever 28 has one of its arms provided with a pin or projection 35 adapted to enter the groove 34 in the collar 33. Thus, the shaft 31 is free to rotate without affecting the position of the bell crank lever 28, but the vertical movement of the shaft will move the bell crank lever about its pivotal center and, through the medium of the connecting rod 27, will actuate the valve 21 which controls the fluid pressure cylinder 7.

A toothed segment 36 is secured to the shaft 31 at a point beneath the bracket 30 and is adapted to rotate therewith but to permit the shaft to be reciprocated independently thereof. This is preferably accomplished by securing the segment to the shaft by means of a key 31<sup>a</sup> and supporting the same at the upper end of the shaft by means of fingers 30<sup>a</sup> rigidly connected with the bracket 30 and extending into an annular groove 36<sup>a</sup> formed in the hub of the segment. A short shaft 37 is mounted in the bracket 30 at a point removed from the shaft 31 and has secured to the lower end thereof a pinion 38 meshing with the toothed segment 36. A bevel gear 39 is also rigidly secured to the shaft 37, preferably at a point above the bracket 30 and meshes with a second bevel gear 40 rigidly secured to one end of a shaft 41 journaled in an arm 42

carried by the bracket 30, and connected at its outer end by a universal joint 43 with the rod 6 which operates the setting shaft 3. It will be apparent that the shaft 31 is so connected to the setting mechanism that the rotation thereof will actuate that setting mechanism and that the shaft 31 is also so connected to the controlling device for the power driven operating mechanism that the vertical movement of the shaft will operate the valve controlling said mechanism.

A suitable actuating member is arranged within convenient reach of the conductor from the position which he occupies when collecting fares and is connected to the shaft 31 in such a manner as to impart both a reciprocatory and a rotatory movement thereto. To this end a bracket 44 is supported from the end wall 1 of the car and is provided with a central web 45, through which the shaft 31 passes, and is also provided with a vertically arranged flange 46 extending some distance above the web. A handle 47, having its inner end bifurcated, as shown at 48, extends on opposite sides of the shaft 31 and has the two arms of the bifurcated portion thereof pivotally connected to a collar 49, which is rigidly secured to the shaft 31, this connection being preferably made by means of a pin 50 extending through the inner ends of the arms of the bifurcated portion of the handle and through lugs carried by the collar 49. The handle 47 extends outwardly some distance beyond the flange 46 of the bracket 44 and this bracket is provided with a series of stops 51, 52, 53 and 54, these stops being so arranged that, when the handle 47 is moved into engagement with one of them, the shaft 31 will have been rotated a distance sufficient to actuate the screw-shaft 3 to set the register to indicate a particular fare. In the present instance, when the handle is in engagement with the stop 51, the machine will be set to register a 5 cent fare; when it is in engagement with the stop 52, the machine will be set to register a transfer; likewise, the stop 53 indicates the 3 cent fare and the stop 54 the pass, these four classes of fares being all the present machine is adapted to register, but it will be obvious that the number and character of the fares can be varied at will.

In the present arrangement of the stops it will be observed that the stops 51 and 52 indicating the 5 cent fare and transfer, respectively, are arranged at the opposite sides of a recess or guideway formed in the flange 46, and that the handle can be freely moved from one stop to the other, thus greatly facilitating the shifting of the handle to set the machine to register one or the other of these two fares, which are the fares most used. When it is desired to set the machine to register a 3 cent fare or a pass, the handle must be raised about its pivotal center and

moved over the stop 52 in order to reach the stop 53 and over the stop 53 in order to reach the stop 54. When the handle has been moved into engagement with the stop indicating the particular fare it is desired to register, the outer end of the handle is depressed, thereby elevating the shaft 31, moving the crank arm 28 about its pivotal center, and, through the medium of the connecting rod 27, reversing the valve 21 and admitting the air behind the piston 11 in the cylinder 7, thereby actuating the machine to register the fare indicated by the position of the handle 47. Means are also provided for locking the shaft 31 against rotary movement during the operation of registering a fare, and, to this end, the web 45 of the bracket 44 is provided with a series of openings 55 and an arm 56 is rigidly secured to the shaft 31 at a point beneath the web 45 and is provided with an upwardly extending finger 57 adapted to enter one of the openings 55, the openings 55 being so arranged that, when the handle 47 has been moved into engagement with any one of the several stops, the finger 57 will have been moved into such a position that the upward movement of the shaft 31 will move the finger into one of the openings 55, thereby locking the shaft 31 against rotary movement. The finger 57 is so arranged relatively to the web 45 that it will enter one of the openings 55 during the first portion of the downward movement of the handle 47 and will lock the shaft against movement before the actuating mechanism begins to move.

If desired, means may be provided for imparting vertically reciprocatory movement to the shaft 31 by means of a foot lever and we have shown, in the drawings, means for so actuating the shaft. This means consists merely of a foot lever 58 pivotally mounted between its ends and having one end in engagement with the lower end of the shaft 31, which is provided with a collar 59 to give the same sufficient width to prevent the end of the lever passing off the end thereof and also to form a stop to limit the upward movement of the shaft. When such a foot lever is employed the handle 47 will be utilized for setting the register only and the foot lever will be used to control the operation of the register. We have also provided what may be termed an emergency operating device which can be connected to the slide bar 5 for operating the machine should the power driven operating mechanism be rendered inoperative for any reason, such as the failure of the supply of fluid. This emergency operating mechanism would be used in connection with the setting mechanism above described and is here shown as comprising a foot lever 60 pivotally mounted between its ends and connected by means of a link 61 to one arm of a bell

crank lever 62, the opposite end of which is connected to a link 63, which link is, in turn, provided with means for detachably connecting the same to the slide bar 5. The means for so connecting the link 63 to the slide bar consists, in the present instance, of a clevis or bifurcated member 64 pivotally connected to the end of the link and apertured to receive a pin 65 which extends through the two arms of the bifurcated member and through the slide bar 5 of the operating mechanism for the register. It is also desirable at times to provide the register with an indicator which may be located at a point removed from the register, where it will be brought prominently to the notice of passengers, and to so connect this indicator with the setting mechanism of the register that it will be operated by that mechanism in unison with the setting mechanism. We have, in the present drawings, shown an indicator 66 which is supported on the end of the car near the vertical shaft 31 and at approximately the level of the passenger's eyes, its position being such that it can be easily observed by the passenger as he pays his fare. This indicator is operatively connected to the shaft 31 and, in the present instance, this connection is made by means of a pinion 67 which is secured to and movable with the shaft 31 and which meshes with a rack 68 movably mounted on rollers 69 carried by the end of the indicator casing. This rack is a double one and has a second series of teeth extending at right angles to the teeth which mesh with the pinion 67. This second series of teeth is shown at 70 and meshes with a pinion 71 secured to a shaft 72, upon which the indicator 66 is mounted. Thus, it will be seen that the rotation of the shaft 31 will move the rack 68 transversely to the length of the indicator 66 and that, through the medium of the second series of teeth, the rack will rotate the shaft 72 and the indicator, the toothed connections being so proportioned that the movement of the indicator will correspond with the movement of the setting mechanism. In this manner the movement of the handle 47, by means of which the shaft 31 is actuated, in one direction controls both the movement of the setting mechanism and the indicator, and the movement of this handle in the other direction controls the operating mechanism for the register. The pinion 67, carried by the shaft 31, is of a width considerably greater than the width of the rack 68 with which it meshes, thereby permitting the pinion to move vertically with the shaft 31 without disengaging the same from its rack. In this connection it will also be observed that the handle for controlling the setting mechanism and the indicator engages positive stops to limit its movement, thus avoiding

the usual care required of the operator to bring the handle into the exact position desired and enabling the handle to be moved rapidly from one position to the other, the positive stops insuring that when it comes to a stop it will be in proper position.

The operation of the mechanism has been clearly described in connection with the description of the several parts comprising the same and it will be apparent from such description that we have provided an actuating mechanism for a register which can be readily controlled by the conductor, from the position which he occupies to collect the fares, to set the machine and to actuate the operating mechanism; and that, by providing the power driven mechanism for actuating the registering mechanism of the machine, this registering mechanism is controlled by the conductor with small effort and the operation of the same is very rapid. It will also be apparent that, by providing a single member having two movements, one to set the machine and the other to control the power driven mechanism, a minimum amount of movement is required on the part of the conductor, and that the time consumed in registering the fare is thereby further reduced, it being necessary for the conductor to move the actuating handle 47 through but a short space in one direction to set the machine and through a short space in another direction to operate the same. Further, it will be obvious that the construction of the machine as a whole is simple and that the parts thereof are of such a character and are so arranged that they are not liable to be disarranged, broken or otherwise rendered inoperative. It will also be apparent that, by the provision of the emergency operating mechanism, we have provided against the failure of the power driven mechanism for any reason.

While we have shown and described the operating mechanism as comprising a fluid pressure cylinder it will be obvious that other power driven mechanism could be substituted therefor; that such mechanism could be applied to registers of different constructions; and that the controlling devices for the power driven mechanism may be varied without departing from our invention, and, we therefore wish it to be understood that we do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a register, the combination, with means for setting said register to register a particular item, and power driven mechanism to actuate said register to cause it to register said item, of a single manually op-

erated means for controlling both said setting means and said actuating means.

2. In a register, the combination, with means for setting said register, and means for actuating the same, of a power driven mechanism operatively connected to said actuating means, and a device arranged within reach of the operator for actuating said setting means and for controlling said power driven mechanism.

3. In a register, the combination, with means for setting said register, and means for actuating the same, of a power driven mechanism operatively connected to said actuating means, and a member arranged to be actuated by the operator and capable of two movements, one for actuating said setting means and the other for controlling said power driven mechanism.

4. In a register, the combination, with means for setting said register, means for actuating the same, and a frame supporting said parts, of a fluid pressure cylinder mounted within said frame and operatively connected to said actuating means, a valve for controlling the admission of fluid to said cylinder, and a single device arranged at a point removed from said register and within the reach of the operator for controlling said valve and actuating said setting means.

5. In a register, the combination, with means for setting said register, and means for actuating the same, of a fluid pressure cylinder operatively connected to said actuating means, a valve for controlling the admission of the fluid to said cylinder, and a member arranged within reach of the operator and having two movements, the one for actuating said setting means and the other for controlling said valve.

6. In a register, the combination, with a slide bar for actuating said register, of a fluid pressure cylinder having a piston and piston rod, said piston rod being arranged substantially parallel with said slide bar and rigidly connected thereto, a valve controlling the admission of the fluid to said cylinder, and means under the control of the operator for actuating said valve.

7. In a register, the combination, with a main frame comprising end members, means for setting said register, an actuating bar slidably mounted in said frame, a fluid pressure cylinder rigidly secured to said frame between said end members, a piston and a piston rod for said cylinder, said piston rod being operatively connected to said slide bar, and means within the reach of the operator for controlling the flow of fluid to said cylinder and for actuating said setting means.

8. In a register, the combination, with a frame comprising end members, and a bar slidably mounted in said end members and

operatively connected to the registering mechanism, of a fluid pressure cylinder rigidly secured to one of said end members, a piston mounted within said cylinder, a piston rod connected to said piston, means for connecting said piston rod to said slide bar, pipes connected to said cylinder on opposite sides of said piston, a supply pipe, a valve mounted on the other end member of said frame for connecting said supply pipe with one or the other of the first-mentioned pipes, and means arranged within reach of the operator for controlling said valve.

9. In a register, the combination, with means for setting said register, means for actuating the same, a fluid pressure cylinder operatively connected to said actuating means, and a valve for controlling the admission of the fluid to said cylinder, of a shaft capable of both a reciprocatory and a rotatory movement, means for connecting said shaft to said setting means, whereby one of said movements will actuate the same, and means for connecting said shaft to said valve, whereby the other of said movements will actuate said valve.

10. In a register, the combination, with means for setting said register, means for actuating the same, and a power driven mechanism operatively connected to said actuating means, of a shaft capable of both a rotatory and a reciprocatory movement, means actuated by one movement of said shaft for controlling said power driven mechanism, means actuated by the other movement of said shaft for actuating said setting means, and means under the control of the operator for imparting either of said movements to said shaft.

11. In a register, the combination, with means for setting said register, means for actuating the same, and a power driven mechanism operatively connected to said actuating means, of a shaft capable of both a rotatory and a reciprocatory movement, means actuated by one movement of said shaft for controlling said power driven mechanism, means actuated by the other movement of said shaft for actuating said setting means, a bracket arranged near said shaft, a handle connected to said shaft and fulcrumed on said bracket, whereby the movement of said handle about the longitudinal axis of said shaft will rotate said shaft and the movement of said handle about its fulcrum point will impart a reciprocatory movement to said shaft.

12. In a register, the combination, with means for setting said register, means for actuating the same, and a power driven mechanism operatively connected to said actuating means, of a shaft capable of both a rotatory and a reciprocatory movement, means actuated by one movement of said shaft for controlling said power driven

mechanism, means actuated by the other movement of said shaft for actuating said setting means, a bracket surrounding said shaft and having a flange extending substantially parallel with said shaft, a collar rigidly secured to said shaft near said bracket, and a handle pivotally connected to said collar and extending beyond the flange of said bracket.

10 13. In a register, the combination, with a main frame, setting mechanism for said register comprising a screw-shaft journaled in said frame, actuating mechanism for said register comprising a bar slidably mounted in  
15 said frame, and a power driven mechanism operatively connected to said slide bar, of a shaft having both a rotatory and a reciprocatory movement, means actuated by one movement of said shaft for imparting a  
20 rotatory movement to said screw-shaft, and means controlled by the other movement of said shaft for actuating said power driven mechanism to impart a reciprocatory movement to said slide bar, and means for im-  
25 parting either of said movements to said shaft.

14. In a register, the combination, with means for setting said register, means for actuating the same, and a power driven mechanism operatively connected to said actuating means, of a shaft having both a reciprocatory and a rotatory movement, means for imparting either of said movements to said shaft, a lever operatively connected to said shaft and to said power driven mechanism, whereby the reciprocatory movement of said shaft will control said power driven mechanism, a second shaft supported at a point adjacent to said first-mentioned shaft, a pinion secured to said second shaft, a toothed segment carried by the first-mentioned shaft and meshing with said pinion, and means for operatively connecting said second shaft to said setting means, whereby the rotary movement of the first-mentioned shaft will actuate said setting means.

15. In a register, the combination, with a frame, setting means for said register comprising a screw-shaft journaled in said frame, actuating means for said register comprising a bar slidably mounted in said frame, a fluid pressure cylinder operatively connected to said slide bar, and a valve for controlling the admission of the fluid to said cylinder, of a shaft having both a reciprocatory and a rotatory movement, means for imparting either of said movements to said shaft, a bell crank lever pivotally mounted near said shaft, and having one arm operatively connected to said shaft, means for connecting the other arm of said bell crank lever to said valve, a second shaft, a pinion carried by said second shaft, a toothed segment carried by the first-mentioned shaft and meshing with said pinion, a bevel gear

also mounted on said second shaft, a second bevel gear meshing with the first-mentioned bevel gear and operatively connected with said screw-shaft.

16. In a register, the combination, with means for actuating said register, a power driven mechanism operatively connected to said actuating means, and means for controlling said power driven mechanism, of a reciprocatory shaft, means for operatively connecting said reciprocatory shaft to said controlling means to positively actuate the same, and means for imparting reciprocatory movement to said shaft.

17. In a register, the combination, with means for actuating said register, a fluid pressure cylinder operatively connected to said actuating means, and a valve for controlling the admission of fluid to said cylinder, of a shaft capable of a reciprocatory movement, a bell crank lever having one arm operatively connected to said reciprocatory shaft, means for operatively connecting the other arm of said lever to said valve to positively actuate the same, and means for imparting a reciprocatory movement to said shaft.

18. In a register, the combination, with means for setting said register, and means for actuating said register comprising a slide bar, of a shaft rotatably and slidably mounted near said register, means for operatively connecting said shaft to said setting means, means connected to said shaft for actuating said slide bar, and means for imparting movement to said shaft.

19. In a register, the combination, with means for setting said register, and means for actuating said register comprising a slide bar, of a shaft rotatably mounted near said register, a toothed segment carried by said shaft, a second shaft journaled at a point removed from said first-mentioned shaft, a pinion carried by said second shaft and meshing with said segment, means for operatively connecting said second shaft to said setting means, means for actuating said slide bar, and means for imparting rotatory movement to said first-mentioned shaft.

20. In a register, the combination, with means for setting said register, means for actuating the same, and a shaft having both a reciprocatory and a rotatory movement and operatively connected to said setting means and said actuating means, respectively, of a bracket mounted near said shaft, a handle connected to said shaft and fulcrumed on said bracket, whereby the movement of said handle about the longitudinal axis of said shaft will rotate the same and the movement of said handle about its fulcrum will impart a longitudinal movement to said shaft.

21. In a register, the combination, with means for setting said register, means for

actuating the same, and a shaft having both a reciprocatory and a rotatory movement and operatively connected to said setting means and said actuating means, respectively, of a bracket surrounding said shaft and having a flange arranged substantially parallel therewith, a collar rigidly secured to said shaft, a handle pivotally secured to said collar and fulcrumed to said flange, whereby the movement of said handle about the longitudinal axis of said shaft will impart a rotatory movement thereto, and the movement of said handle about its fulcrum point will impart a longitudinal movement thereto.

22. In a register, the combination, with means for setting said register, means for actuating the same, and a shaft having both a reciprocatory and a rotatory movement and operatively connected to said setting means and said actuating means, respectively, of a handle operatively connected to said shaft to impart both a rotatory and a reciprocatory movement thereto, and means for locking said shaft against rotatory movement after it has begun to move longitudinally.

23. In a register, the combination, with means for setting said register, means for actuating the same, and a shaft having both a reciprocatory and a rotatory movement and operatively connected to said setting means and said actuating means, respectively, of a bracket surrounding said shaft and having a flange arranged substantially parallel therewith, a collar rigidly secured to said shaft, a handle pivotally secured to said collar and fulcrumed to said flange, whereby the movement of said handle about the longitudinal axis of said shaft will impart a rotatory movement thereto, and the movement of said handle about its fulcrum point will impart a longitudinal movement to said shaft, said bracket having a series of apertures therein, and an arm secured to said shaft and having a part adapted to enter one of said openings when said shaft has been moved longitudinally.

24. In a register, the combination, with setting mechanism for said register, means for operating said register, an indicator, a shaft for said indicator, and a pinion mounted on said shaft, of a second shaft having both a rotatory and a reciprocatory movement, means for operatively connecting said shaft to said setting mechanism, whereby the rotation of said second shaft will control the movement of said setting mechanism, means for operatively connecting said second shaft to the operating means, whereby the reciprocation of said second shaft will control said operating means, a pinion mounted on said second shaft, a rack movably supported near the end of said indi-

cator and meshing with the pinion on said second shaft, and a second rack secured to the first-mentioned rack and meshing with the pinion on said indicator shaft.

25. In a register, the combination, with setting mechanism for said register, of a controlling member positively connected to said setting mechanism, and movable into a plurality of positions, and a stop for positively limiting the movement of said controlling member when it has been moved into one of said positions, whereby, when said controlling member is in engagement with said stop, the register is set to register a predetermined item.

26. In a register, the combination, with setting mechanism for said register, of a rotatable shaft operatively connected to said setting mechanism, a handle for rotating said shaft, and a series of stops adapted to positively limit the movement of said handle and so arranged that, when said handle is in engagement with one of said stops, said setting mechanism will have been actuated to set said register to register a predetermined item.

27. In a register, the combination, with setting mechanism for said register, of a rotatable shaft operatively connected to said setting mechanism, a handle for operating said shaft, and a bracket arranged near said shaft and having a plurality of rigid stops arranged to be engaged by said handle and to positively stop the movement thereof when said setting mechanism has been actuated to set said register to register a predetermined item.

28. In a register, the combination, with counters, of means for setting said register, and an actuating device therefor having two movements, of a fluid pressure cylinder having a piston positively moved in both directions by fluid pressure and operatively connected with said actuating means, and a single means for manually controlling said setting means and the admission of fluid to the cylinder.

29. In a register, the combination, with means for setting said register, and operating mechanism for the same, of a fluid pressure cylinder operatively connected to said operating mechanism, and means for connecting said fluid pressure cylinder to the compressed air receptacle of an air-brake system of a car, and means for controlling the admission of the air to said cylinder and for actuating said setting means.

30. In a register, the combination, with means for setting said register, and means for actuating the same, of a fluid pressure cylinder operatively connected with said actuating means, a valve for controlling the admission of fluid to said cylinder, and a single manually operated device for con-

trolling said setting means and for positively actuating said valve.

31. In a register, the combination, with means for setting said register, and means for actuating the same, of a power-driven mechanism operatively connected to said actuating means, an actuating member capable of two movements, one to actuate said setting means and the other to control said power-driven mechanism, and a single controlling member arranged within reach of the operator to impart both movements to said actuating member.

32. The combination, with a car, and an air-brake system therefor, of a fare register mounted on said car, means for setting said register, means to actuate the same, a fluid pressure operated device operatively connected to said actuating means, a connection between said device and said air-brake system, and means arranged to be operated by the conductor from a single position to

control said device and to operate said setting means.

33. The combination, with a car, and an air-brake system therefor, a fare register mounted on said car, means for setting said register, means to actuate the same, a fluid-pressure operating device operatively connected to said actuating means, a connection between said device and said air-brake system, a valve to control the passage of air from said system to said device, and a single device to actuate said valve and said setting means.

In testimony whereof, we affix our signatures in presence of two witnesses.

WILFRED I. OHMER.  
DAVID B. WHISTLER.  
JOHN E. McALLISTER.

Witnesses:

ROBERT E. COWDEN,  
CHESTER H. KRUGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."