2 Sheets—Sheet 1.

J. B. BENTON.

Operating Connections for Fare-Registers.

No. 227,207. **Patented May 4, 1880.**

Fig. 1.

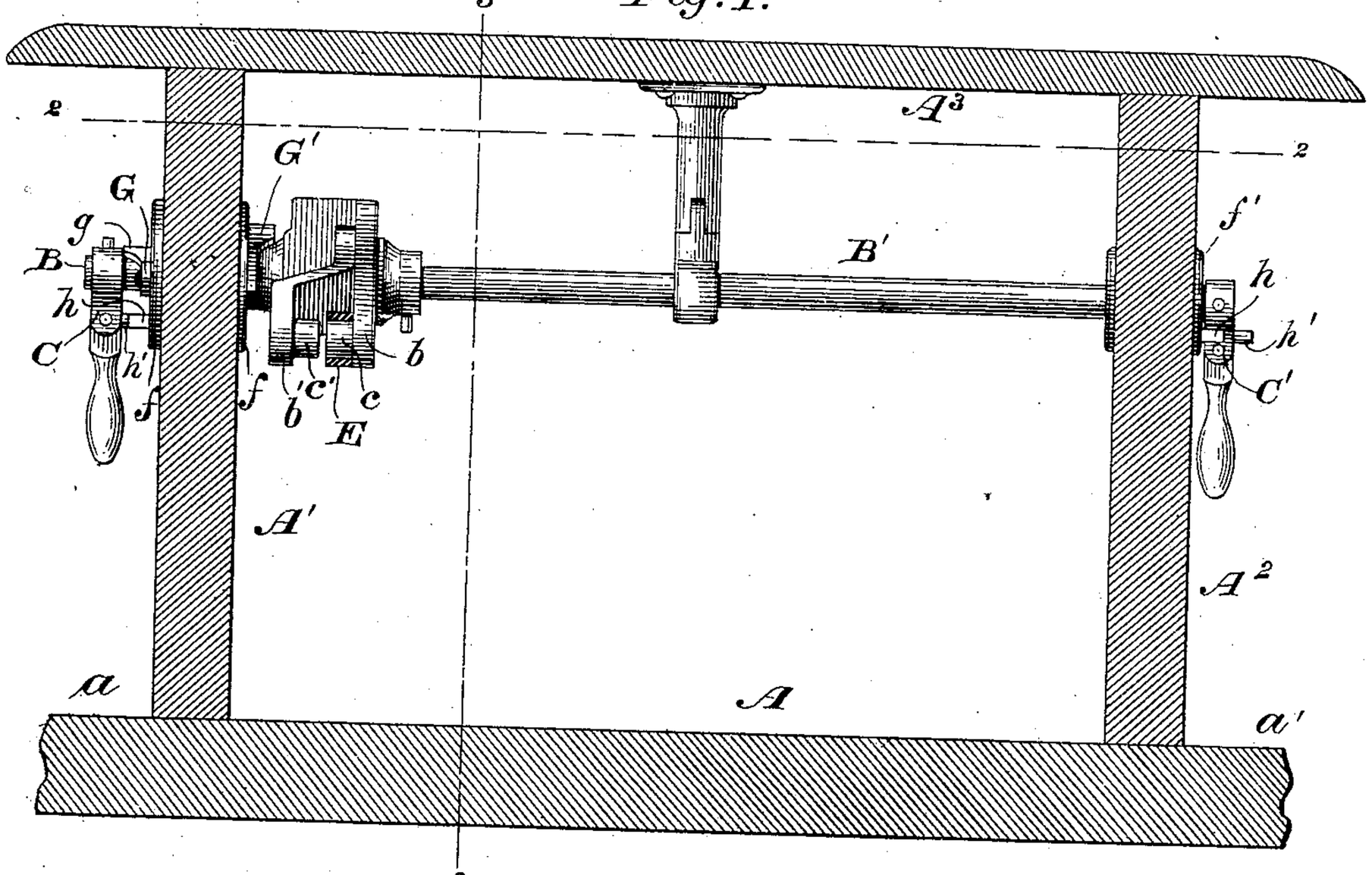

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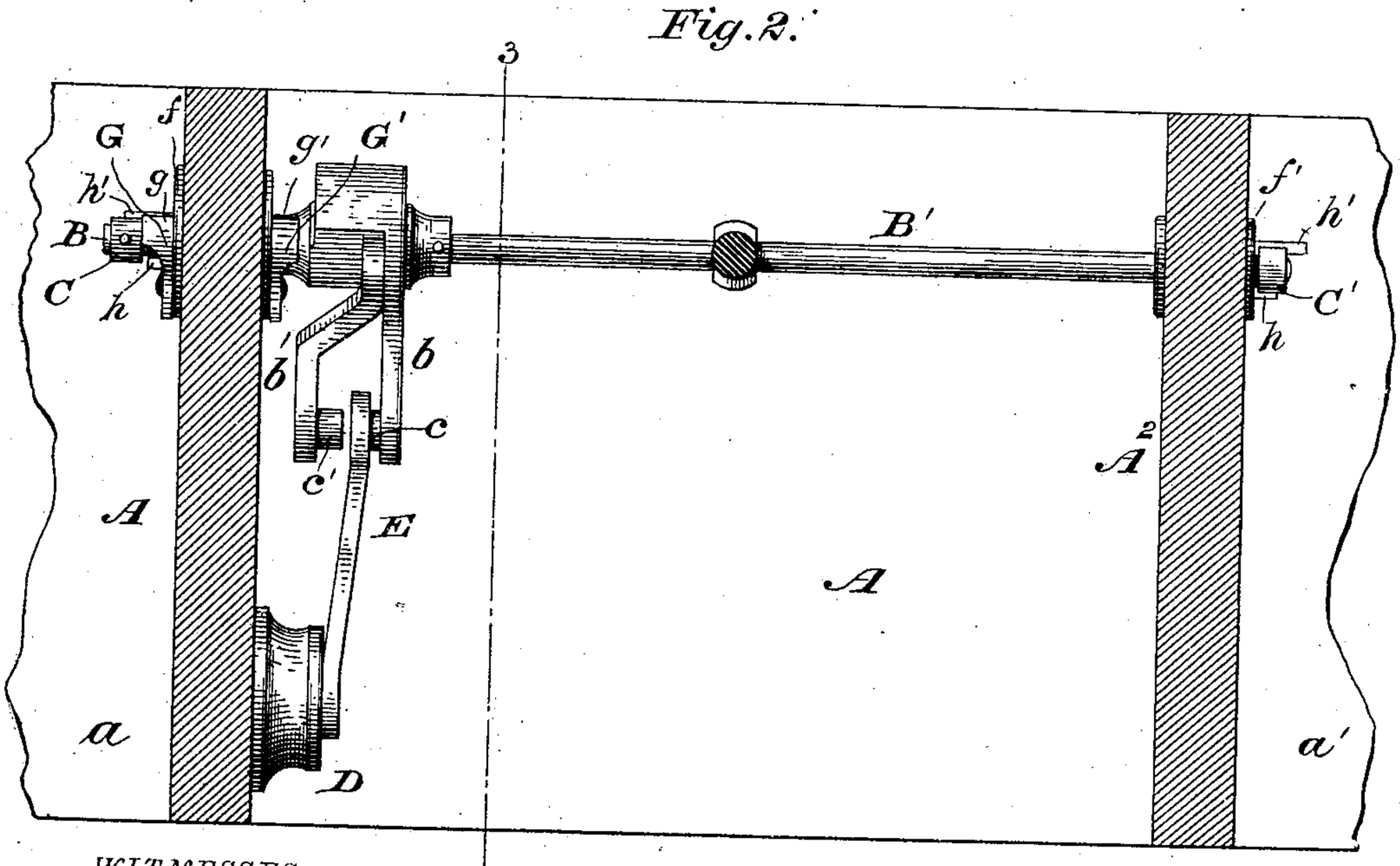
Fig. 2.



3.

WITNESSES

Wm A. Skinkle.
R. F. Barnes

INVENTOR
John B. Benton.

By his Attorneys
Baldwin, Hopkins & Peyton.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

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Fig. 3.

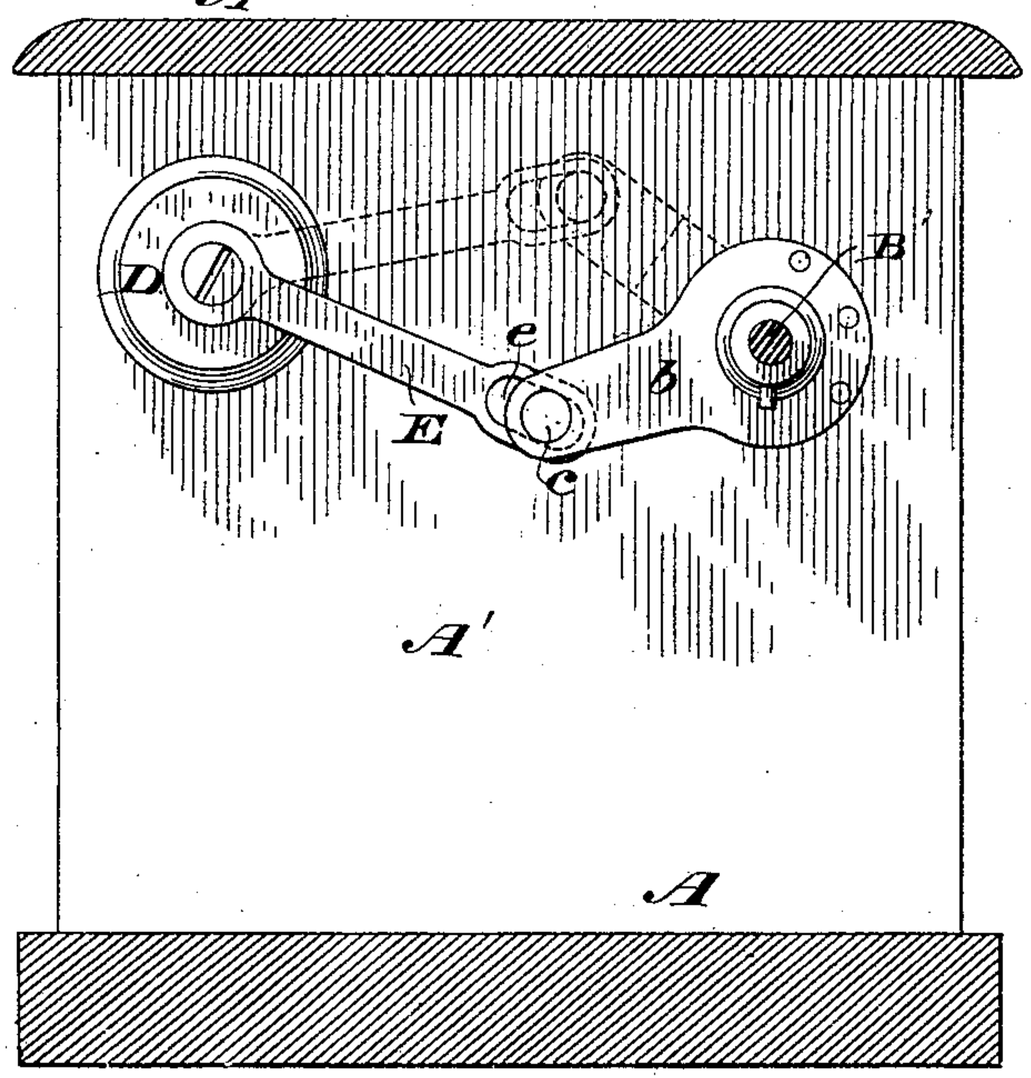


Fig. 4.

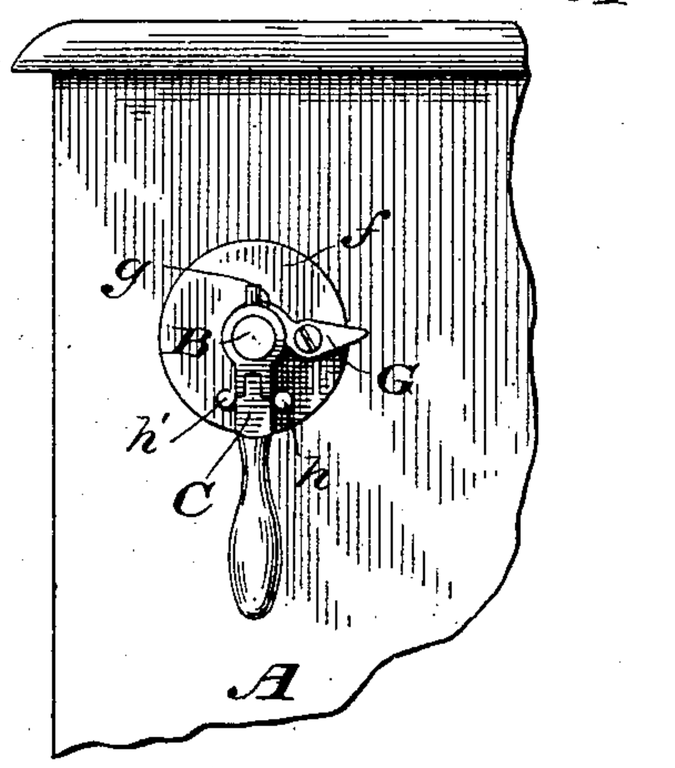
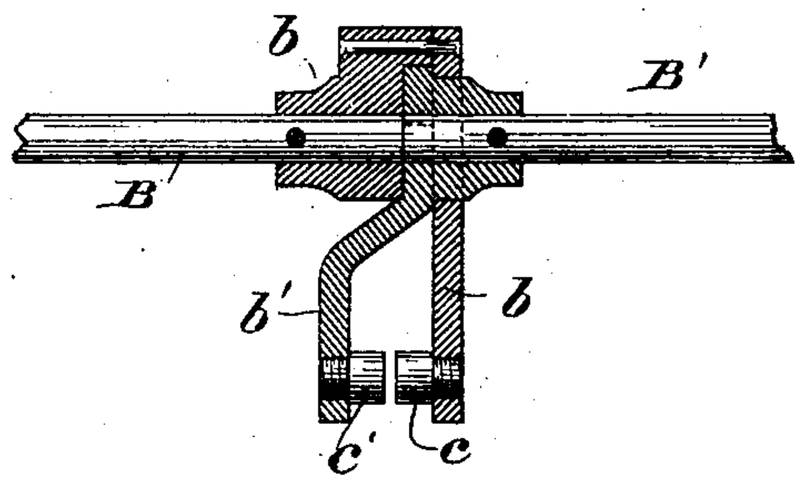


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN B. BENTON, OF NEW YORK, ASSIGNOR TO THE RAILWAY REGISTER MANUFACTURING COMPANY, OF BUFFALO, N. Y.

OPERATING CONNECTION FOR FARE-REGISTERS.

SPECIFICATION forming part of Letters Patent No. 227,207, dated May 4, 1880.

Application filed February 26, 1880.

To all whom it may concern:

Be it known that I, JOHN B. BENTON, of the city, county, and State of New York, have invented certain new and useful Improvements in Operating Connections for Fare-Registers, of which the following is a specification.

In Letters Patent No. 167,057, granted to me August 24, 1875, I have shown and described a fare-register fixed or secured at one end of a car with an operating connection to actuate it in the process of counting, tallying, or registering the fares received or collected by the conductor, consisting of a rod extending from end to end of said car, to which rod fixed handles are secured or a detachable implement applied to enable the conductor to turn the rod and actuate the register.

My present invention constitutes an improvement upon the actuating connection shown in said patent, my said improved connection being designed for use more particularly on street-cars of the class known as "double-ender horse-cars," upon which the services of a driver only are required, a locked box or receptacle being employed in which the fares are deposited by the passengers, instead of the fares being collected by a conductor moving through the car.

I have found that objections exist to the use of a simple rod-connection with fixed handles at each end for double-ender cars which have a driver only, as also to the use of an actuating connection for such cars where it is necessary to use a detachable implement to move the connection.

A fixed handle would be liable to be tampered with, and might be accidentally or maliciously used to operate the register by a person standing on the rear platform of the car, while if the handle were made detachable, so as to be removed by the driver after each actuation of the register, then the liability would occur of the implement getting mislaid or lost.

A greater objection still to the detachable implement is that the driver would be compelled to apply the detachable instrument to the connection in order to record each fare, thereby taking his attention from his team, which team, in connection with the necessity of looking after and keeping a surveillance over the fare-box, is nearly all that he can properly attend to.

The object of my present invention is to avoid as far as possible all objections to the use of a register upon double-ender horse-cars which employ a fare-box in lieu of a conductor, and to enable the driver to register the fares as they are deposited in the box by a connection which does not require a detachable implement, and which does not permit accidental or malicious tampering with or operation of the register by the passengers either in the car or while standing upon the rear platform thereof.

My invention consists of certain new combinations and organizations of devices pointed out at the close of this specification.

The accompanying drawings represent my invention as embodied in the best way now known to me. My said invention, however, may be embodied and organized in ways other than as represented in said drawings without departing from its spirit.

Figure 1 represents a longitudinal central section through so much of a double-ender horse-car having my improvements applied thereto as is necessary to illustrate the subject-matter claimed. Fig. 2 is a horizontal section therethrough on the line 2 2 of Fig. 1. Fig. 3 is a transverse section therethrough on the line 3 3 of Figs. 1 and 2. Fig. 4 is an end view of a portion of one end of the car, and Fig. 5 is a longitudinal section through a portion of the operating connections detached.

Only so much of the car is shown in the drawings as I deem it necessary to describe—to wit, the floor or bottom A, the platforms *a a'*, one at each end of the car, the ends or front and rear partitions, A' A^2, and the top or roof A^3, the sides of the car being omitted.

The fare-box or locked receptacle in which the fares are deposited by the passengers is not shown, as it is not necessary to an understanding of my invention. Said fare-box may be similar to those in common use, and may be secured in place in the car in well-known ways.

Running through the car from end to end, in this example, and mounted in suitable bearings at one side thereof, and out of the way of the passengers, whether standing or seated, is

a rod-connection, the opposite ends of which have jointed to them a handle or arm at a point within easy reach of the driver while in his driving position upon the platform of the car. The said rod-connection is divided transversely at or near one end thereof, or is made in sections B B′, the adjacent ends of said sections B B′ being provided, respectively, with a fixed crank or arm, *b b′*. The crank *b* of the section B of the rod-connection and the crank *b′* of the section B′ thereof interlock with each other, as clearly shown in the sectional view, Fig. 5, whereby, while capable of limited turning movements, independently of each other, the said sections B and B′, with their respective cranks, are locked together as against independent endwise movement.

Connected with the registering-machine D, which is secured at the end of the car next the cranks of the rod-connection, is, in this example, a lever, E, and said lever, when vibrated, is capable of imparting a movement to the counting or tallying parts of said register, each vibration moving the index or register wheel forward one point, or to the extent of one indication in the process of registering the fares deposited in the fare-box, an alarm being sounded simultaneously with each registration made, to indicate that the fare has been properly registered. This register may be similar to those in common use, whether of the duplex character, which embody what is known as a "general" and a "trip" register, or of the single-register type.

I prefer such a register as is shown in Letters Patent No. 167,057, heretofore granted to me under date of August 24, 1875, which is of the well-known "monitor" register type of machines.

The outer or free end of the actuating-lever E of the register is provided with a slot or opening, *e*, for the reception of the crank-pins *c c′* at the outer ends of the cranks *b b′*, one at a time, the organization of said cranks and their rods B B′, with the lever E, being such that but one of said crank-pins can lie in the slot or opening of the lever E or be connected therewith at the same time, so that when connected with one of said cranks the lever E can be vibrated and the register actuated by that crank only and its actuating rod and handle, the rod-connection being allowed endwise play to a limited extent, so that either one or the other of its cranks can be connected with the lever E, as desired.

The endwise movement of the rod-connection is limited, in this instance, by the handles C C′, which respectively abut against the bearings *f f′* of the connection at the ends of the car when the opposite handle is drawn out to its operating position.

In order to prevent accidental endwise movement of the rod-connection which might result from the vibrations or motions of the car, I pivot, preferably, to the bearing *f* at the end of the car nearest the register D and cranks of the rod-connection, one inside and one outside said end or partition, suitable dogs or devices G G′, the curved end *g* of the dog G falling in between the shoulder formed by the handle C mounted upon the rod B and the outside of the bearing *f* when the handle C is in its operative position, while the curved end *g′* of the dog G′ is capable of falling in between the shoulder formed by the crank *b* and the inside of the bearing *f* when the handle C′ is in an operative position.

In order to render the handle opposite to the one which is in its operative position incapable of turning its rod and crank, I provide the end bearings, *f f′*, of the rod-connection each with two projecting studs or pins, *h h′*, one of which, *h*, is preferably shorter than the other, between which pins the jointed handle or a portion of the rod opposite the operating-handle fits, and is thereby prevented from turning, until drawn or forced out beyond the end of the shorter pin, when the handle can be turned, the opposite handle being then carried between the studs or pins projecting from the bearing at that end of the car, and thus, in its turn, locked from operation.

The operation of the connection is as follows: Supposing the parts to be in the position depicted in Figs. 1 and 2, the driver's position will be on the platform *a*. The handle C′ will be locked from turning by its retaining-pins, and consequently be incapable of being worked to rock the rod B′ and its crank *b′*, which is out of connection with the register, while the handle C will be in its operative position and capable of being rocked past the shorter pin *h* to turn the rod B and its crank *b*, which is in connection with the actuating-lever E of the register. The dog G will also lie in the position shown in Figs. 1 and 2, and will prevent endwise movement of the rod-connection until it (the dog) is raised or withdrawn from between the bearing *f* and the shoulder formed by the handle C. When the car arrives at the end of the route the team and driver are shifted to the opposite end of the car, and the handle of the operating connection at that end of said car is then placed in its operative position, which is accomplished by raising the dog G and forcing the rod endwise, thereby carrying the handle C between its locking-pins *h h′* and its crank *b*, out of connection with the actuating-lever E, while the handle C′ will be carried out beyond its shorter locking-pin *h* and its crank *b′* connected with the actuating-lever, the rod-connection being then locked in its new position against endwise movement by the dog G′, which falls in between the shoulder formed by the crank *b* and the inside of the bearing *f*, the curved end of said dog G′ fitting the curved surface of the rod B snugly.

I do not limit myself to the particular instrumentalities shown in the drawings for carrying out my present invention. I may substitute devices different from the retaining

pins or lugs to lock one handle while the other is released. I may employ other devices than the pivoted dogs G G′ to prevent endwise movement of the connections. I may employ handles other than jointed handles for working my connection, although such is deemed preferable where rod-connections are used, for the reason that by jointing the handles I am enabled to prevent the rod from being strained, which objection cannot well be avoided where fixed handles are employed, as I have ascertained; and I may make other changes in the connections, within certain limits, without departure from the spirit of my invention.

The object of making one of the aforesaid locking-pins shorter than the other is to prevent movement of the actuating-handle in the wrong direction, the longer pin or projection constituting a positive stop to the movement of the handle past it, while said handle, when drawn out, is free to be turned or rocked past the shorter pin. At each actuation of the handle it may be returned to its normal position in readiness for a new actuation of the register, automatically, by a spring inclosed within the register-casing and acting on the actuating-lever E in well-known ways; or the handle may be moved in the direction to operate the register and returned to its normal position by hand alone, as desired.

I claim as my invention—

1. The combination, substantially as herein-before set forth, of a fare-register, a connection for operating said register, having a handle or actuating portion at or near each end of the car, and mechanism for connecting one of the actuating-handles with the register while disconnecting the other.

2. The combination, substantially as herein-before set forth, of a register and the rod-connection extending from end to end of the car, having at or near each end an actuating-handle to work the register, only one of which handles at a time is in actuating connection with said register.

3. The combination, substantially as herein-before set forth, of the register, the actuating sectional or divided rod-connection thereof, the handles at or near each end of said connection, the cranks or arms of said connections, and the actuating-lever of the register, whereby one only of said cranks is in actuating connection with said lever at a time, and the connection of one disconnects the other.

4. The combination, substantially as herein-before set forth, of the register-actuating rod-connection extending through the car, with handles jointed to said connection to move it in working the register.

5. The combination, substantially as herein-before set forth, of the register, the sectional operating rod-connection of said register, the bearings of said connection, the handles of said connection, one at each end of the car, and the devices which lock one section of said rod-connection from being turned by its handle while the other section is free to be rocked to operate the register.

6. The combination, substantially as herein-before set forth, of the register, the endwise-movable operating rod-connection, and the devices to lock said connection against endwise movement when in its operative condition.

7. The combination, substantially as herein-before set forth, of the register with the sectional rod-connection, one section of which may be turned relative to the other to actuate the register while the sections are locked together as against independent endwise movement.

In testimony whereof I have hereunto subscribed my name.

JOHN B. BENTON.

Witnesses:
WM. S. BEAMAN,
ANTHONY GREF, Jr.