

J. H. ROSE.
FARE REGISTER.

No. 436,805.

Patented Sept. 23, 1890.

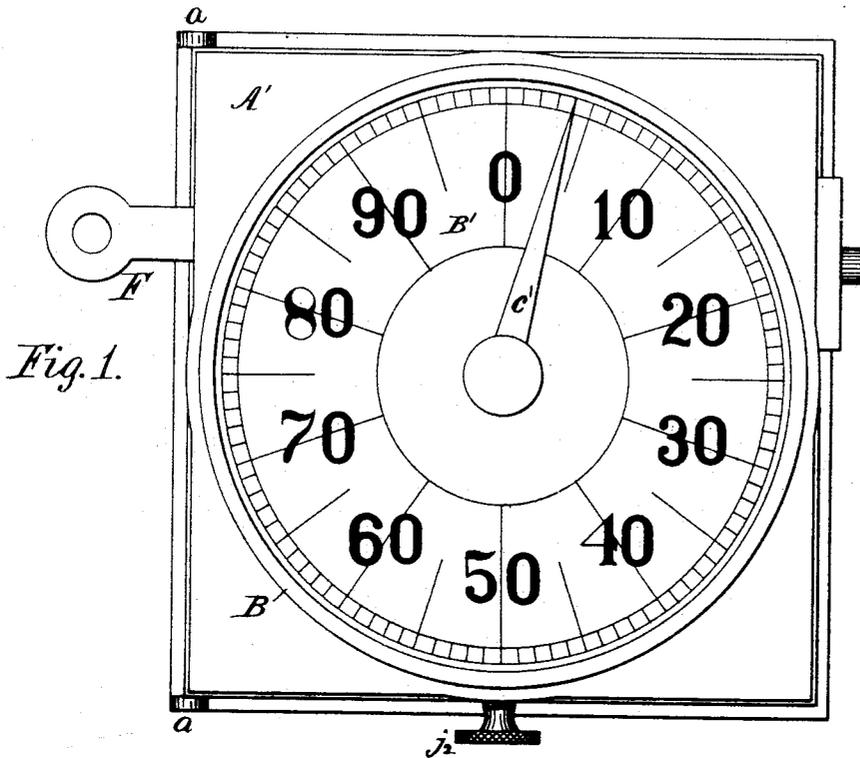


Fig. 1.

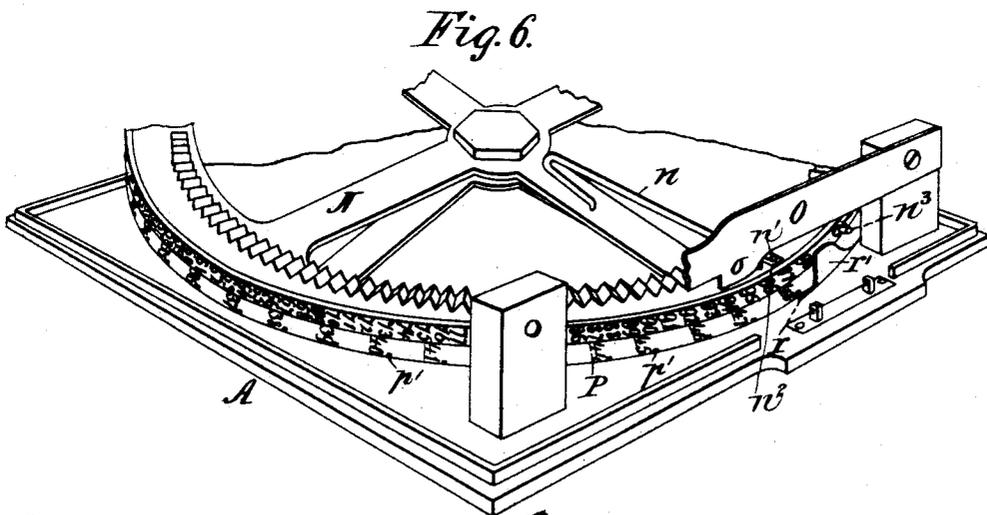


Fig. 6.

Witnesses:
W. C. Jirdinston.
Frank O. Loveland.

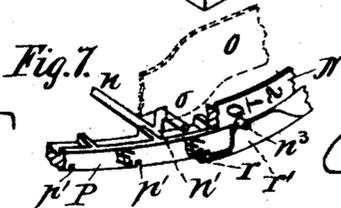


Fig. 7.

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(No Model.)

4 Sheets—Sheet 2.

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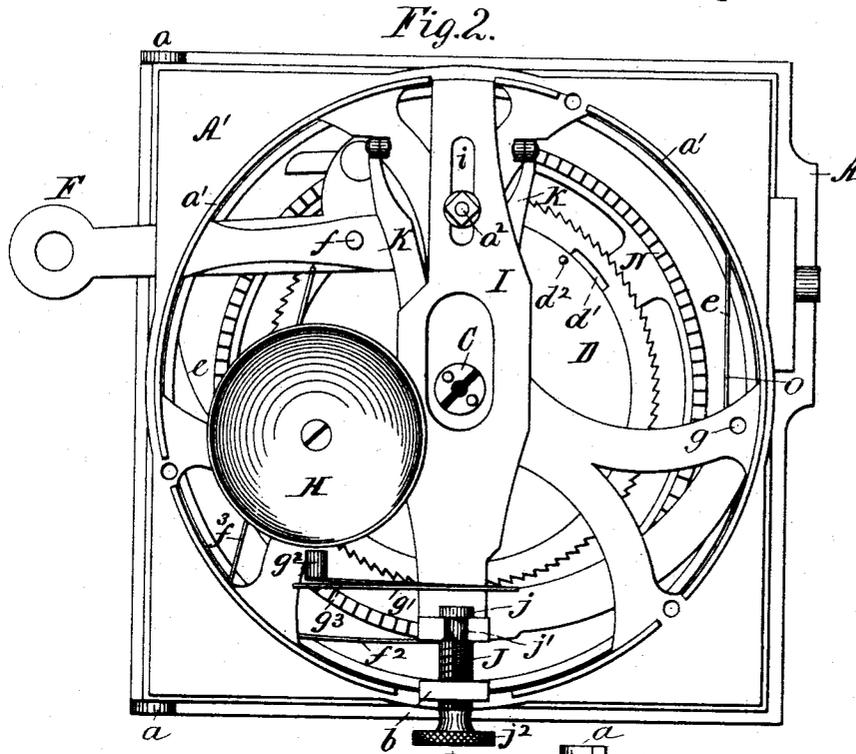
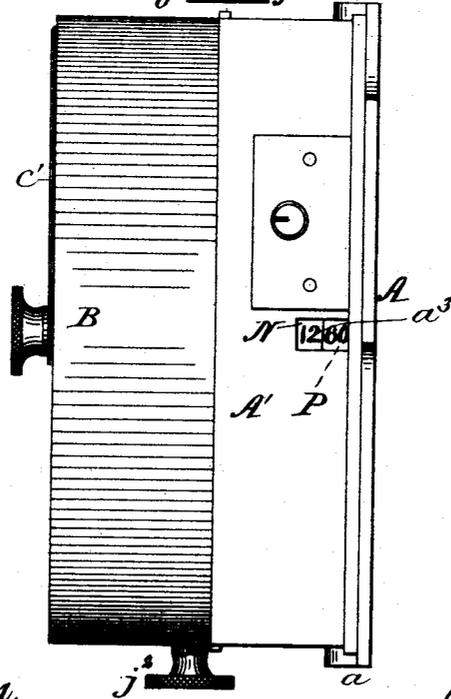


Fig. 3.



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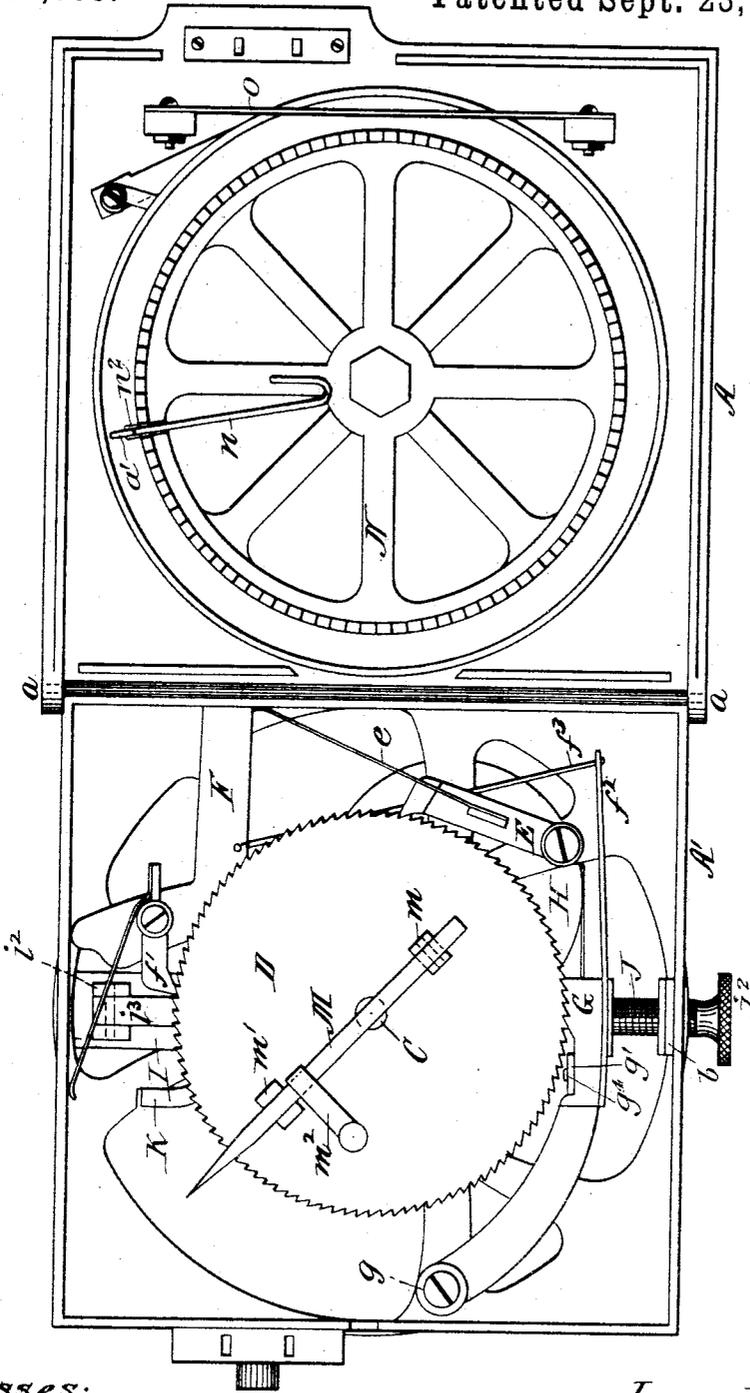
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Fig. 4.



Witnesses:
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(No Model.)

4 Sheets—Sheet 4.

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Fig. 5.

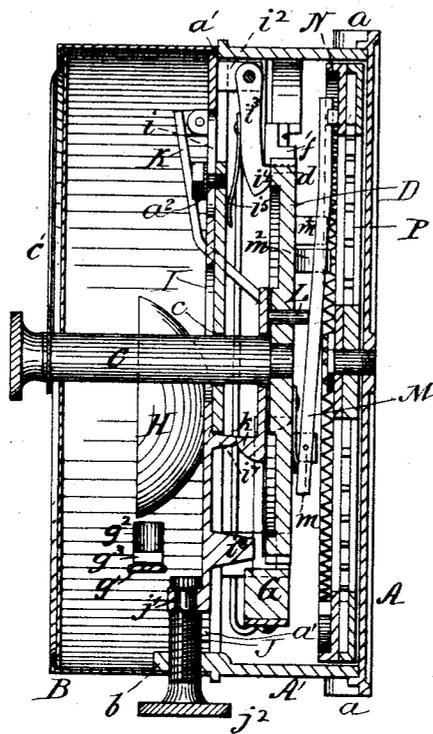
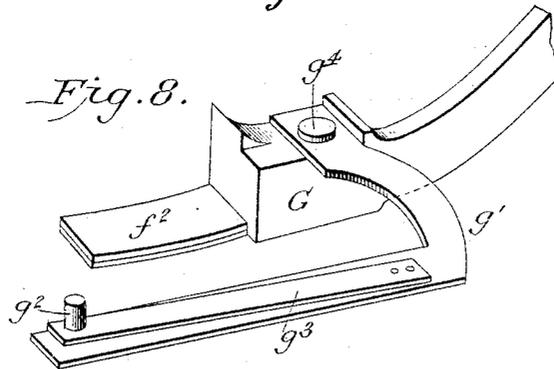


Fig. 8.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN H. ROSE, OF LIMA, OHIO.

FARE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 436,805, dated September 23, 1890.

Application filed September 27, 1889. Serial No. 325,252. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ROSE, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Fare-Registers, of which the following is a specification.

My invention relates to that class of registers adapted to indicate, by means of a dial or pointer, the number of fares registered, and at the same time to give an audible signal, as upon a bell, for each fare registered.

My invention consists in improved devices for registering the total number of fares, and in devices adapted to permit the resetting of the apparatus at a fixed point, but prevent its being reset at any other point.

I have illustrated my invention as applied to a register, such as may be fixed at some point in a street-car, and with which the conductor communicates by means of a cord, rope, or other device; but it may be used whenever a register is required for analogous purposes.

Referring to the drawings, Figure 1 is a front view of my improved register. Fig. 2 is a front view with the dial removed. Fig. 3 is a side view. Fig. 4 is an elevation showing the frame turned away from the base. Fig. 5 is a vertical central section. Figs. 6 and 7 are details of the registering device. Fig. 8 is a detail view showing the dog and bell-hammer arm.

A is the base, to which a frame A' is hinged, as at *a*, so as to be turned away from the base or secured thereto. Upon the outer edge of this frame is a circular flange *a'*, upon which an inclosing circular case B is set. This case carries a dial B'. (Shown in Figs. 1 and 5.)

C is a shaft arranged centrally in the apparatus in suitable bearings *c*, and carrying on its outer end a pointer *c'*. On the inner end of this shaft a ratchet or trip register wheel D is fixed, so that the shaft turns with the wheel. The number of teeth in this wheel corresponds to the number to be registered in a single revolution, here represented as one hundred.

E is a dog pivoted in the frame, and *e* a spring to hold the dog in the teeth of the

ratchet, so as to permit the wheel to be turned in a forward direction, but prevent its being turned in the reverse direction.

F is an operating-lever pivoted in the frame upon a fulcrum *f* and extending through the side of the frame into a convenient position to be moved by the operator. This may be done by the application of a cord thereto, or otherwise. The inner arm of the lever is turned upward from its fulcrum and carries a pawl *f'*, arranged to work into the teeth of the ratchet, so that if the lever F be raised the bent arm will force the pawl forward and advance the wheel D one tooth. The rotation of the wheel D imparts a corresponding motion to its shaft C and to the pointer *c'*, turning the pointer one division of the dial to each movement of the lever, the pointer indicating such movement, as is usual in this class of registers. The lever F is returned by a spring *f''*, shown connected therewith by a link *f'''*.

G is a dog pivoted at *g*, and to it is applied a spring, the tendency of which is to hold the dog in engagement with the toothed wheel D in such manner that as the wheel is turned the beveled side of the tooth will force the dog outward until it escapes from that tooth. In the form shown the same spring *f''*, which serves to return the lever to its position of rest is applied to the dog G to hold it in contact with the toothed wheel. An arm *g'* is bolted to the dog G at *g''* and extends forward to a point in advance of the slide I, and thence to the left toward the bell H. This arm *g'* carries a bell-hammer *g''*, preferably mounted on a spring-arm *g'''* and adapted to strike a gong H, when the spring forces the dog into the notch after each tooth is passed. It will be seen that as the wheel is rotated, each of its teeth will force the dog G outward, and on the return of the dog into the next tooth the hammer will strike the bell.

In a plane parallel with the frame is a slide I, through which the setting mechanism is operated. This slide is guided by a slot *i*, working upon a projection *a''*. The lower end is forked to take behind a flange *j* upon the end of a screw J, working in a fixed nut *b* in the frame. In the form shown the screw is

provided with an annular groove j' , into which the upturned prongs of the fork take, one wall of the groove constituting the flange. This screw extends outside the case and is provided with a suitable head j^2 , by which it may be turned so as to move the slide I up or down. Any suitable device may be used to move the slide. This slide is provided with an opening in the central portion to allow it to slide freely up and down without engaging the shaft C. By turning the screw J in one direction the slide will be moved upward, and by turning it in the opposite direction the slide will be moved downward. From the upper end of the slide an arm i^2 extends inward in front of the bent arm of the lever. When the slide I is in the up position the arm is so far distant from the end of the lever F as to permit that lever to play, but when the slide is drawn down the arm i^2 stands in front of the upper or bent arm of the lever and acts as a stop to prevent its forward movement—that is, serves as a lock to prevent the action of the operating-lever upon the wheel D, thus preventing any operation of the register while it is being reset. Pivoted to the arm i^2 is an arm i^3 , provided with an inwardly-projecting hook i^4 , which is pressed against a flange d on the rim of the wheel D when the slide I is up by means of a spring i^5 . When the slide is moved downward it carries the hooked arm i^3 with it, and the hook i^4 takes under the flanged rim d of the wheel D, thereby locking the slide against upward movement. The flanged rim of the wheel is provided at a suitable point with a beveled recess d' , (see Fig. 2,) adapted to permit the passage of the hook i^4 . It is obvious that the slide will be held against upward movement until the wheel is rotated into such a position that the recess d' registers with the hook i^4 , thus permitting the operator to set the instrument at the predetermined point, but prevents him from setting it at any other point. To assist in setting the instrument a stop d^2 is provided, which engages the hooked arm when it registers with the recess. Near the lower end of the slide is an inwardly-projecting arm i^6 , which takes over the dog G. When the slide is in its up position the arm i^6 stands so far above the dog G as to permit the bell-hammer to work freely, but as the slide descends the arm i^6 strikes the dog and forces it out of engagement with the wheel. When the bell-hammer dog is bearing upon the ratchet-wheel D, under the force of the spring f^2 , it holds the wheel so strongly that it cannot be turned by the pointer, but when it is thrown from the wheel then the only friction upon the wheel is that of the pawl f' and dog E, the springs of which are so light that the wheel may be easily turned forward by the pointer for the purpose of setting. Near the upper end of the frame is pivoted a forked oscillating lever K, provided at its lower end with a thumb-shaped projection k ,

adapted to engage an inward projection i^7 on the slide I when the slide is in its up position and force a pin L, taking through the wheel D, against a finger M, pivoted to said wheel at m and moving in guides m' against a spring m^2 . The finger M is thereby forced between two of the teeth on the crown-wheel N, which serves as a permanent register-wheel, and the permanent register-wheel must move with the ratchet-wheel D. When the slide I is moved downward the inward projection i^7 is disengaged from the thumb-shaped projection k , and the spring m^2 forces the finger out of engagement with the teeth on the registering-wheel.

As a means for registering the total number registered by the apparatus, I employ the crown-wheel N, having numbers around its periphery corresponding to its teeth, here represented as ranging from zero to ninety-nine. This crown-wheel is actuated one number for each fare registered by means of the finger M and the wheel D. When the apparatus is reset, the finger M being disengaged from the permanent register-wheel N, the latter is not moved; but when registering is resumed it continues its rotation from where it stopped. When the permanent register-wheel has made a complete revolution, a bent portion n' of a spring-arm n engages a cam projection o on the under surface of a fixed bar O, and the spring-arm n is forced through an opening n^2 in the wheel N into engagement with teeth on the rim of a second crown-wheel P, and the wheel P, which serves as a second permanent register-wheel, is carried forward one division. The cam-surface then releases the spring-arm and the wheel P remains stationary until the wheel N has made another circuit. To prevent the wheel P from being moved otherwise than as described it is provided with a spring-catch r , adapted to take into a series of recesses p' around the periphery of the wheel P. A lug n^3 on the periphery of the wheel N is so arranged that it will engage a cam projection r' on the catch r and force it out of engagement with the recesses p' when the spring-arm n engages the cam projection o and permits the wheel to be moved as heretofore described.

The frame is provided with an opening a^3 , through which the numbering on the periphery of the wheels N and P may be observed. If desired, the numbers may be raised around the peripheries of these wheels, as shown in Fig. 3, and observed by embossing them upon a card, by inserting the card over the opening a^3 , and striking it with a mallet.

I claim—

1. In a registering apparatus, the combination of an operating-lever, a trip register-wheel, a slide arranged for longitudinal movement in a plane substantially parallel with the wheel and provided with a thumb-shaped projection, an oscillating lever provided with a thumb-shaped projection, a pin extending

through the trip register-wheel, a finger, and a permanent register-wheel, the pin being adapted to throw the finger into engagement with the teeth of the permanent register-wheel, substantially as and for the purpose specified.

2. In a registering apparatus, the combination of an operating-lever, a trip register-wheel, a slide arranged for longitudinal movement in a plane substantially parallel with the wheel and provided with a thumb-shaped projection, an oscillating lever provided with a thumb-shaped projection, a pin extending through the trip register-wheel, a finger, and a permanent register-wheel, the pin being adapted to throw the finger into engagement with the teeth of the permanent register-wheel, and a spring-arm adapted to engage teeth on

a second permanent register-wheel, substantially as and for the purpose specified.

3. In a registering apparatus, the combination of the operating-lever F, trip register-wheel D, finger M, pin L, permanent register-wheels N and P, the spring-arm *n*, and cam *o*, substantially as and for the purpose described.

4. In a registering apparatus, the combination of the operating-lever F, trip registering-wheel D, finger M, pin L, permanent register-wheels N and P, spring-arm *n*, cam *o*, catch *r*, recesses *p'*, and lug *n*³, substantially as and for the purpose described.

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Witnesses:

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E. W. PRICE.