

S. BERGMANN.

ELECTRICAL FARE-REGISTER.

No. 171,714.

Patented Jan. 4, 1876.

Fig. 1.

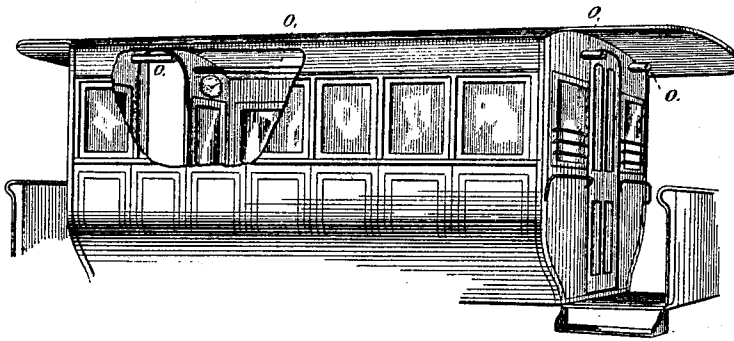


Fig. 2.

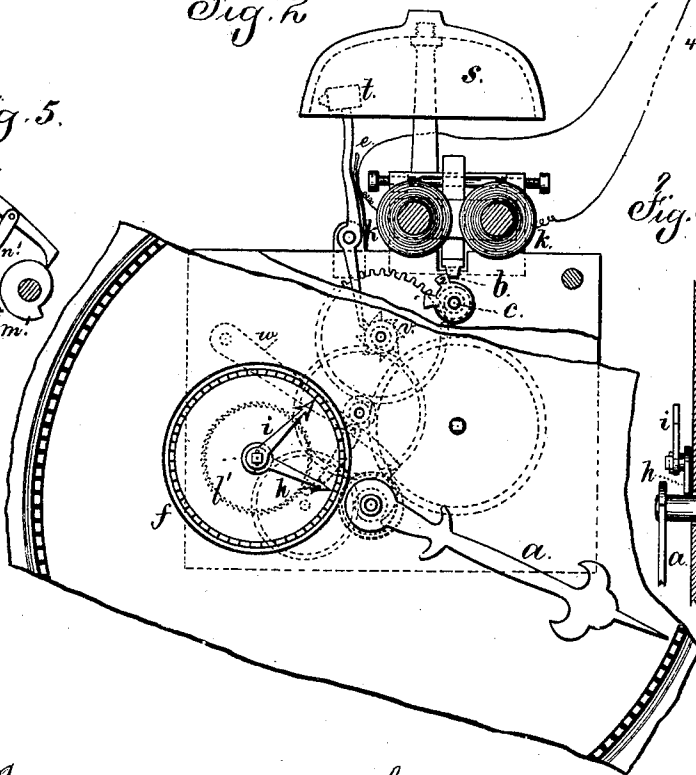
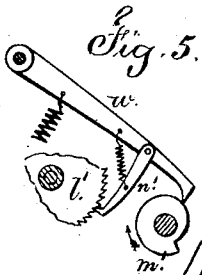


Fig. 3.

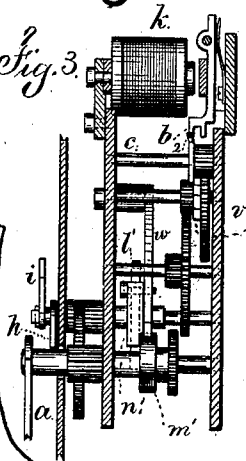
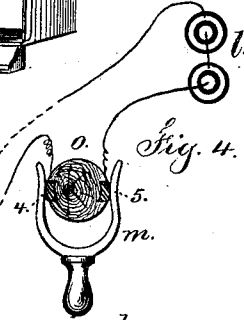


Fig. 4.



Witnesses,
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per
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UNITED STATES PATENT OFFICE.

SIGMUND BERGMANN, OF NEW YORK, N. Y.

IMPROVEMENT IN ELECTRICAL FARE-REGISTERS.

Specification forming part of Letters Patent No. **171,714**, dated January 4, 1876; application filed May 17, 1875.

To all whom it may concern:

Be it known that I, SIGMUND BERGMANN, of the city of New York, N. Y., have invented an Improvement in Fare-Registers for Railway-Cars, of which the following is a specification:

I combine with the fare-registering mechanism a clock-movement or train that turns the indicating-hand when said train is liberated. This is used in preference to moving the hand by the direct action of a pull and pawl, because the pull and pawl may not move the hand correctly, but the clock movement is positive in its action upon the indicating mechanism. I also employ an electro-magnet to liberate the clock mechanism, and the circuit-wires of this magnet pass to a battery and around the car to various places where the conductor can close the circuit by a metal fork or key, so that the reception of a fare can be denoted upon the dial at numerous places instead of the conductor pulling the bell at the ends, as has heretofore been done.

In the drawing, Figure 1 is a perspective view, partially in section, of the car. Fig. 2 is an elevation of the dial and clock-work, and Fig. 3 is a section of the same. Fig. 4 is a section of the hand-rail and elevation of the circuit-closing fork.

I make use of a train of clock-work that is actuated by a spring, and tends to turn the indicating-hand *a*, but this can only move when the block *b* is moved, which block forms an escapement that allows the shaft *c* of the train of gearing to make nearly a revolution, and upon the backward movement of the block *b* the pallet 2 of the escapement is arrested, so that it is impossible for the train of gearing to move and indicate one fare by the dial, except when the block *b* is moved, and this cannot be moved without the clock-work denoting one fare; hence the apparatus is more reliable than those registers in which there is no clock-work and the index is moved by the direct action of a pawl operated by hand.

The block *b* may be moved by a strap or wire actuated by hand, but I prefer and use an electro-magnet, *k*, to which one circuit-wire of a battery, *l*, passes, and thence the two circuit-wires extend around the car in proximity to each other, so that the conduct-

or can, by a press-button or other means, close the circuit in any convenient place in the car, and thereby actuate the electro-magnet and block to liberate the clock-work.

It will generally be preferable to employ a bar of wood, *o*, running around the car, which bar may be the hand-rail for the straps, and at opposite sides of the bar I introduce metallic strips 4 and 5, to which the circuit-wires are connected, so that the conductor closes the circuit by a metal fork in a handle, as seen at *m*, and thereby registers the fare.

There may be two registering mechanisms, one for five-cent fares and the other for three-cent fares, and one battery only be used, connected to the different rails or bars *o*, one of which is for one fare and the other for the other.

The bell *s* will be struck by the hammer *t* that is pressed back by one of the cam-teeth *v* each movement of the escapement, and flies back against the bell by a spring, *e*. The second dial *f* has a hand, *i*, that is moved forward step by step to indicate the number of times the hand *a* is turned, and thus to denote the total of fares collected.

The means for giving this step-by-step motion are shown in Fig. 5, the same consisting of the cam *m'* on the arbor of the hand *a*, and the arm *w*, spring-pawl *n'*, and ratchet-wheel *l'*. As the hand *a* completes its revolution the cam *m'* allows the arm *w* to be drawn down by its spring, and by the pawl *n'* turn the wheel *l'* one tooth. The hand *h* moves step by step in unison with the hand *a*.

I claim as my invention—

1. The combination, with a fare-register and indicating hand and dial, of a train of gearing actuated by a spring, and an escapement operated by the conductor, so as to move the register by the gearing and spring as each fare is received, as set forth.

2. The bar *o*, with metallic strips on opposite sides and the circuit-closing fork *m*, in combination with the fare-register for a car, and the electro-magnet for actuating the same, substantially as set forth.

Dated May 13, 1875.

SIGMUND BERGMANN.

Witnesses:

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