(No Model.)

S. M. PRUDEN.

ELECTRICAL REGISTERING DEVICE.

No. 381,279. Patented Apr. 17, 1888.

Fig. 1

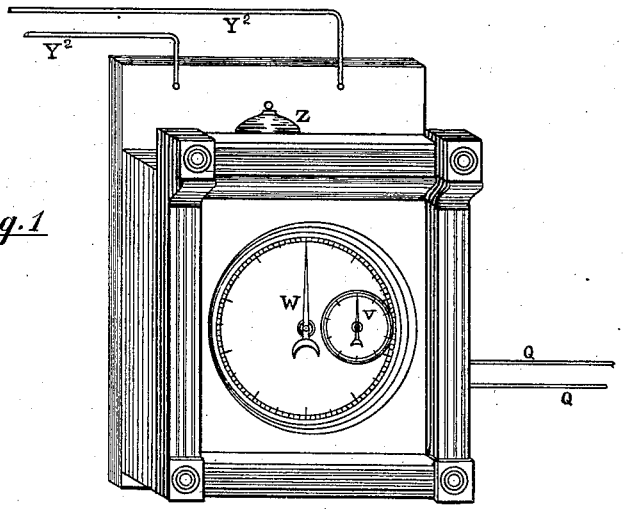
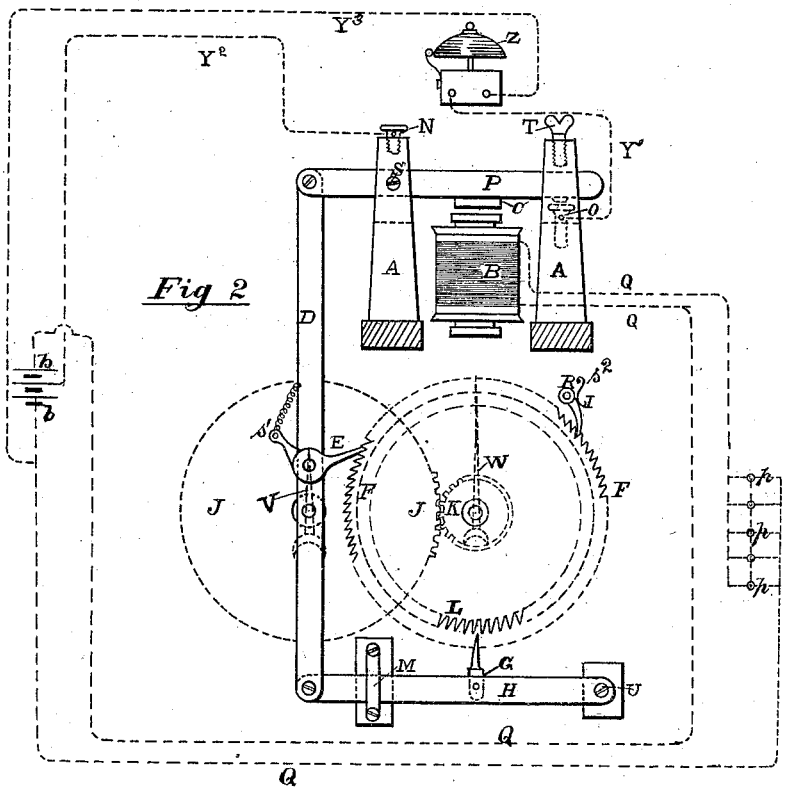


Fig 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL M. PRUDEN, OF NEWARK, NEW JERSEY.

ELECTRICAL REGISTERING DEVICE.

SPECIFICATION forming part of Letters Patent No. 381,279, dated April 17, 1888.

Application filed May 27, 1886. Serial No. 203,351. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. PRUDEN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Electrical Registering Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to register fares, &c., collected by conductors or other officials, more perfectly and accurately, and to provide a device of a more simple construction and arrangement of parts and of a reduced cost of manufacture.

The invention consists in the improved register and in the arrangements and combinations of parts thereof, substantially as will be hereinafter set forth, and finally be embodied in the clauses of the claims.

Referring to the accompanying drawings, Figure 1 represents a perspective view of the invention complete; and Fig. 2 is a rear view of portions of the same drawn to a larger scale and showing the relative positions of the operating parts.

In said drawings, A indicates an armature-frame adapted to be suitably disposed within the case or receptacle of said register, and B an electro-magnet adjusted in said case to attract an armature, C, carried by a lever, P, fulcrumed at S in said frame. The stroke of the lever P may be limited by means of an adjusting-screw, T. The lever at the end on the opposite side of the fulcrum from the armature is attached to a connecting-rod, D, extending downward from said lever and passing into close proximity to a reversely-toothed ratchet wheel or disk, F, below which it connects with another lever, H, running at an angle to said connecting-rod and approximately parallel with the first lever referred to, the said lever H also lying in proximity to the ratchet-wheel at another point in its periphery.

The connecting-rod D carries a pawl, E, which is pivoted on said rod and extends into engagement with one set of teeth of said ratchet-wheel, being held into such engagement by a suitable spring, s', attached at one end to the arm of the pawl and at the other to said connecting-rod.

When the armature of the lever P is attracted by its electro magnet B, and the lever actuated in its limited course with the connecting-rod and pawl carried thereby, the said pawl, engaging the ratchet, causes the latter to move forward one tooth (more or less) according to its adjustment. The said ratchet is arranged upon a shaft or arbor which revolves therewith, which said shaft extends through the case or a graduated dial thereof and carries a pointer or index-hand, W, for pointing to the graduation-marks or other figures or characters on the outer face of said dial. Upon said shaft is also a pinion, K, which engages with a gear-wheel, J, revolving on another shaft or spindle having a pointer or index-hand, V, intended for indicating the figures, characters, or marks on a small dial, as shown in Fig. 1. The lower lever, H, carries a tooth or pin, G, adapted to engage with the cogs or teeth L L of a second series of teeth of the ratchet-wheel F, the object of the tooth G being to prevent the ratchet-wheel from moving more than one tooth at a time under the impulse given to it by the pawl E, magnet, and intermediate devices.

To prevent the ratchet-wheel F from moving in the reverse direction, another pawl, I, held in position against the ratchet-wheel by a spring, s^2, is arranged in suitable position on the frame or case, as at R. The lower lever, H, is fulcrumed on the frame or case at any suitable point therein, as at U, and the tooth G is disposed between the connecting-rod and the fulcrumal point, so that when the armature C is attracted by the magnet the said tooth G is lifted into engagement with the ratchet, preventing the same from moving beyond the proper limit.

The magnet B is connected by suitable conducting-wires, Q Q Y' Y^2 Y^3, with a battery, b, and a bell, Z, the latter being provided to draw the attention of the passengers to the fact that a fare has been paid and registered, so that greater protection is afforded against peculation on the part of the conductor.

In connection with one of the wires Q is a series of push-buttons, p, of any suitable construction. These are disposed, in connection

with the conducting-wires, at various points in the car, so that when the conductor receives the fare he can conveniently register the same without moving far from his position by simply pushing on the button and making a circuit. When the lever P is attracted by its armature, it is brought in contact with an insulated screw, *o*, connecting with the conducting-wire Y′, thus securing a complete circuit. The lever H is held in a proper operative relation to the ratchet by means of a suitable guide or stay, M.

In operating the device, when the conductor receives the fare, he touches one of the series of buttons *p p p*, connected with the battery or batteries *b b* and registering instrument or device placed at suitable positions in the car. As a result of this action, the armature C is attracted by its electro-magnet, and the lever P is brought into contact with the insulated screw *o*, the bell responds by a single tap, and the fare is registered on the dial simultaneously.

The path of the current is sufficiently evident from an inspection of Fig. 2, and further description is deemed unnecessary.

The circuit is closed by a push on the button *p*, connecting with the wires Q Q. The current coming from the battery *b* and passing through the wires Q Q to the electro-magnet B attracts the armature C and brings the lever P into contact with the insulated screw *o*, thus closing a parallel circuit. A part of the current then passes from the battery through the wire Y^2, the upper part of the metallic frame A, the screw S, the armature P, the wire Y′, attached to the insulated screw *o*, the electric bell Z, and through the wire Y^3 back to the battery, thus forming a complete bell-circuit.

Having thus described the invention, what I claim as new is—

1. In combination, in an electrical register, a ratchet-wheel having two series of teeth, the teeth of one series pointing in the reverse direction from the other, a connecting-rod, D, a pawl arranged thereon, a lever, P, arranged to give movement to said connecting-rod, an electric device for actuating the lever P, a lever, H, connected to the lever P by said rod D, a dial, and index-hands, said parts being arranged and adapted to operate substantially as set forth.

2. A registering mechanism consisting of an electro-magnet, an armature-lever, a rod, D, pivoted to said lever and carrying a pivoted pawl, a rod, H, provided with a tooth, G, and to which the pawl-carrying rod is pivoted, and a ratchet-wheel having series L and F of teeth, the teeth of one series pointing reversely from those of the other series, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of May, 1886.

SAMUEL M. PRUDEN.

Witnesses:
FREDK. F. CAMPBELL,
FRED C. FRAENTZEL.