No. 638,631. Patented Dec. 5, 1899.

T. F. GREEN.

MAGNETIC SWITCH OPERATING MECHANISM.

(Application filed Oct. 5, 1899.)

(No Model.)

Fig. 1.

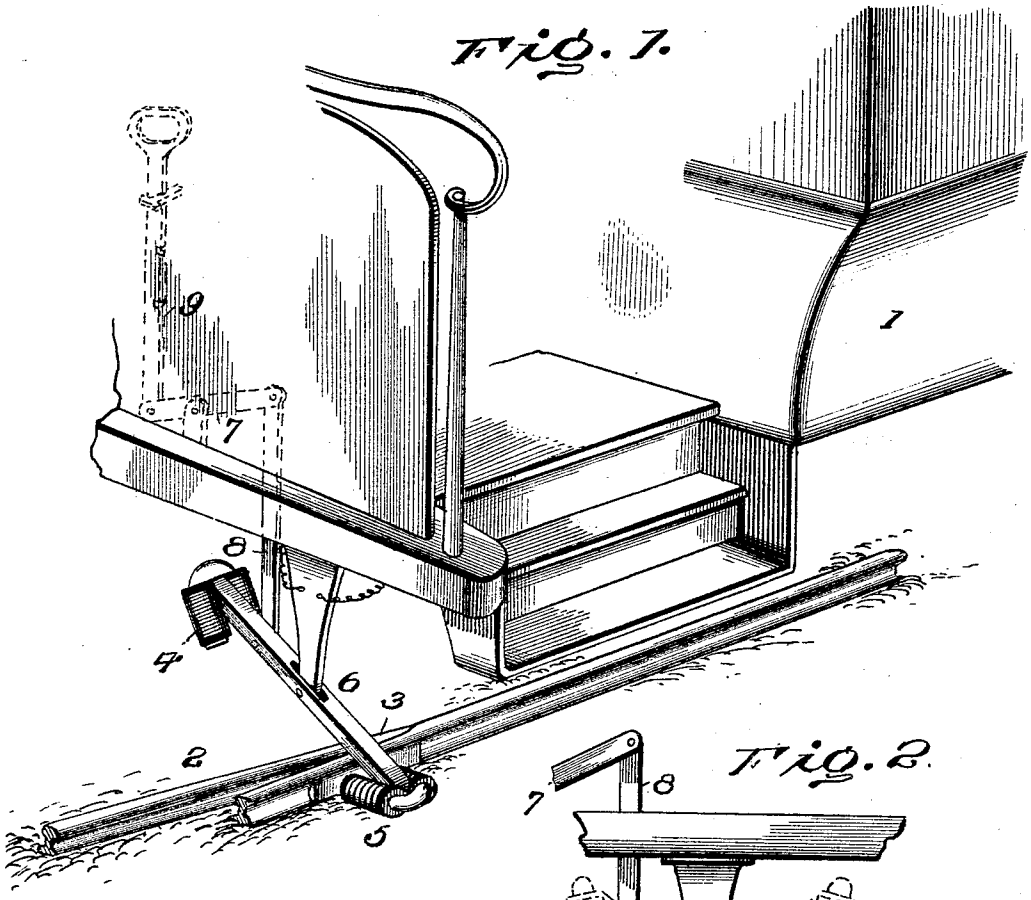


Fig. 2.

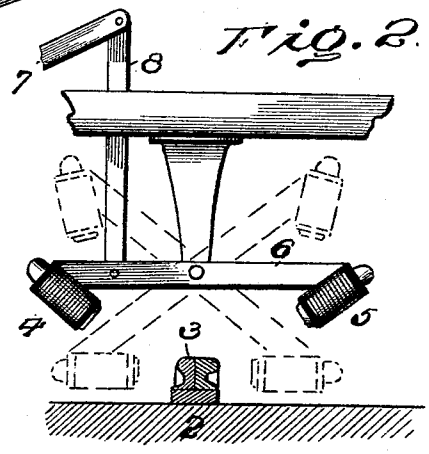
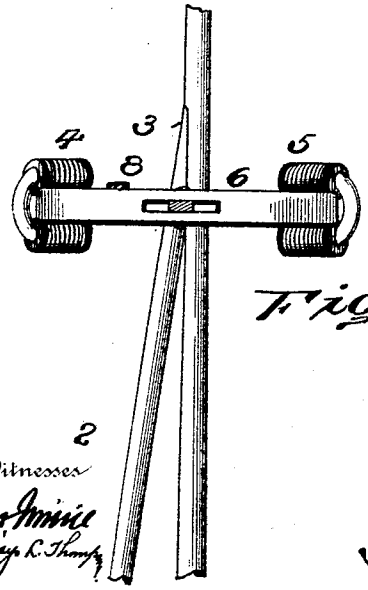


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS F. GREEN, OF PITTSBURG, PENNSYLVANIA.

MAGNETIC SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 638,631, dated December 5, 1899.

Application filed October 5, 1899. Serial No. 732,669. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. GREEN, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Magnetic Switch-Operating Mechanism; 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.

This invention has relation to switch-operating mechanism chiefly designed for street-railways, but which may be used in connection with railroads of any character.

The purpose of the invention is to combine with the car magnets—permanent or electromagnetic—disposed to attract the switch-point and under control of the motorman, so as to be thrown into or out of action, one magnet being arranged to move the switch-point to the right and the other to throw it to the left.

Generally, the invention consists of two magnets applied to the car and located upon opposite sides of the switch-point and means for raising and lowering the magnets, said operating means being by preference constructed to move the magnets simultaneously in opposite directions to prevent the lowering of both at the same time.

Specifically, the invention consists of a tilting beam or bar applied to the forward portion of the car and having a magnet at each end and means for turning the beam upon its fulcrum and holding it in the required position.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the forward portion of a car and switch, showing the invention in operative relation. Fig. 2 is a front view. Fig. 3 is a plan view.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The car 1 may be of any mechanically-propelled type and the switch 2 of ordinary construction, both being shown to illustrate the application of the invention. The switch-point 3 is mounted for free movement at its swinging end and is clear of all positive connections with its operating mechanism.

The magnetic switch mechanism is applied to the front portion of the car 1 well in advance of the forward wheels, so as to throw the switch, when required, prior to the entrance of the said wheels upon the switch. The magnets 4 and 5, preferably electromagnetic, are located beneath the floor or platform of the car and upon opposite sides of the switch-point 3 and are vertically movable to be thrown into and out of position for actuating the switch. When the car is propelled by electromotive power, the electromagnets will be energized by the electric current derived from the feed-wire or conductor, a switch (not shown) being provided to throw them into and out of circuit. The tilting beam or bar 6 is located horizontally beneath the platform of the car, and the magnets 4 and 5 are attached thereto upon opposite sides of its pivotal center. This beam is adapted to be turned upon its pivot to throw one of the magnets up and the other down, and any means for effecting this end may be provided, and, as shown, a lever 7 is connected by a link 8 with the beam, and for convenience a bar 9 is attached to the lever and extends within convenient reach of the motorman for operation, said bar 9 having means for holding it in any one of three positions, according as the magnets are out of action or either one is lowered.

If the magnets 4 and 5 are of the electro type, they will be energized upon the car approaching the switch to be thrown, and the beam 6 is rocked to throw one or the other of the magnets into position to attract the switch-point and open or close the switch, as required. The magnets must be of such strength as to cause the switch-point to move instantly by a snap-like action, so as to set the switch in advance of the forward wheels.

Having thus described the invention, what is claimed as new is—

1. Means applied to a car for setting a switch consisting of magnets located to come upon opposite sides of the switch-point or movable part, and means for moving the magnets vertically to bring the switch-point or movable part within their magnetic field, substantially as described.

2. Means applied to a car for setting a switch consisting of magnets located to come upon opposite sides of the switch-point or movable part, and means for simultaneously moving the magnets vertically in opposite directions to prevent their action upon the switch-point or movable part at the same time, substantially as set forth.

3. Means applied to a car for setting a switch consisting of magnets located to come upon opposite sides of the switch-point or movable part, and a tilting beam having the magnets attached thereto upon opposite sides of its pivotal support, substantially as specified.

4. Means applied to a car for setting a switch consisting of magnets located to come upon opposite sides of the switch-point or movable part, a tilting beam having the magnets attached to their opposite end portions, and means for turning the beam upon its pivot and holding it in the required position.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS F. GREEN. [L. S.]

Witnesses:

C. M. IAMS,

H. W. WATTS.