

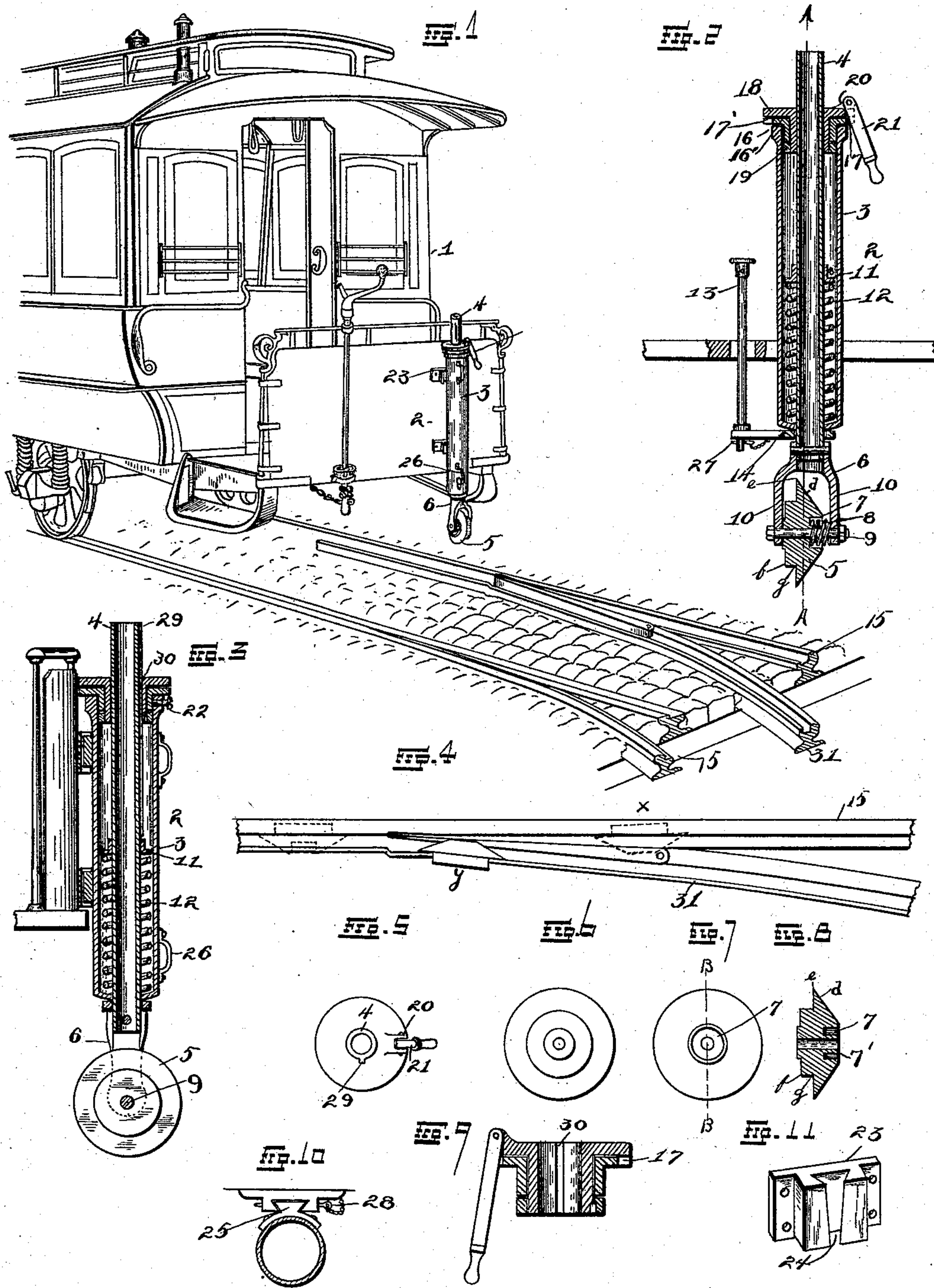
(No Model.)

J. A. MARSH.

DEVICE FOR OPERATING RAILWAY SWITCHES.

No. 571,006.

Patented Nov. 10, 1896.



Witnesses.

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UNITED STATES PATENT OFFICE.

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DEVICE FOR OPERATING RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 571,006, dated November 10, 1896.

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To all whom it may concern:

Be it known that I, JOHN A. MARSH, of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in a
5 Device for Operating Railway-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in a
10 device for operating railway-switches; and it consists in the novel arrangements, construction, and combination of parts, as will be more fully hereinafter described, and set forth in the claims.

15 The object of my invention is to construct a device by which to operate a switch either way by means of a device secured to the front end of the car, and which is operated by the motorneer or operator of the car.

20 The device is detachably secured to the car for the purpose of only using one attachment for the entire car instead of providing one at each end thereof.

Another feature is, if at any time the car
25 is to be turned in for repairs, a new one is then substituted. It may be that this car has no switching device, so then one from another car is taken off and placed on the substitute; and so with the attachment, should
30 it become broken through accident, it can be easily replaced with a new one without much time or difficulty. It is constructed simple and complete, cheaply manufactured, and can be easily manipulated.

35 Referring to the drawings, Figure 1 is a perspective view of a street-car, showing my invention applied thereto. Fig. 2 is a vertical sectional view of my complete invention, showing the foot-operating device. Fig. 3 is
40 a vertical sectional view taken on the line A A of Fig. 2. Fig. 4 is a top plan view of the switch or frog with the wheel of my invention in position for operation. Fig. 5 is a top plan view of the attachment. Fig. 6 is a
45 view of one side of the wheel. Fig. 7 is a view of the other side; and Fig. 8 is a vertical sectional view of the same, taken on the line B B of Fig. 7. Fig. 9 is a vertical sectional view of the upper operating portion of my device to an enlarged scale. Fig. 10 is a top plan
50 view of the fastening device by which the attachment is secured to the car. Fig. 11 is

a perspective view of the socket portion of the fastening device, which is firmly held to the car, and in which the attachment is held. 55

In the drawings, 1 is an ordinary railway-car to which my invention is applied.

2 indicates my complete invention, which consists of a shell or tube 3, in which is operated a rod or tube 4, by which the wheel 5 60 of the switching device is operated.

To the bottom of the rod or tube 4 is provided a fork 6, in which is held the wheel 5, for the purpose aforesaid. Said wheel is provided with a depression or cut-out portion 7 65 at one of its sides for the insertion of a spring 8, and which is supported by the shaft 9 on which the wheel 5 operates.

The wheel 5 is shorter in diameter in cross-section than the distance between the prongs 70 10 of the fork 6, which is for the purpose of allowing the said wheel 5 to adjust itself to the switch according to its position, and the spring 8 is for the purpose of supporting the wheel and keep it rigid and to one side of the 75 fork 6, as shown in Fig. 2.

To the rod or tube 4 is secured a collar 11, which is held thereto in any desirable manner, and rests upon a spring 12, located in the shell 2 for the purpose of raising the wheel 80 and its supportings when the switch has been operated, after it has been operated or pressed down by the foot-lever 13, located upon the platform of the car, said lever passing through the floor of the platform, and is secured to an 85 arm 14, which passes around the rod or tube 4, and which lowers the wheel when the lever is pressed upon.

The wheel 5 has on its one side an incline *d*, which extends from its extreme outer circumference *e* to the edge of the depression 7, 90 in which the spring rests. On the other side of said wheel is a flange or hub *f*, which forms a direct right angle *g*, which is to ride upon the track 15 when the device is lowered to 95 operate the switch.

Within the depression or bore 7 is a hub 7', which forms part of the wheel 5 and acts as a support for the spring 8.

To the upper portion of the shell 2 I provide a device 16, by which the tube or rod 4 100 is turned, and it consists of a collar 16', which is provided on its flange with two slots 17. On the top and extending within is a similar col-

lar 18, which has its vertical portion extending downward some distance below the collar 16'. Around this portion is fixed a collar 19, which prevents the one, 18, from being disconnected from the other, but yet allowing it to turn therein.

Upon the top of the collar 18 is an ear 20, in which is hinged a lever 21. This lever is for the purpose of turning the rod or tube 4, in order to place the wheel 5 in position to operate the switch according to the direction so desired, and when this is done the lever is lowered and placed in the slot 17, thereby locking the same and keeping the wheel in the placed position.

To the rod or tube 4 I provide a feather or key 29, which slides in a keyway or groove 30, formed in the collar 18, for the purpose as before mentioned.

The collar 16' is firmly held to the shell 2 by a set-screw 22 or any other means well known to the trade.

To both ends of the car 1 and firmly secured thereto are steel castings 23, which are provided with a dovetailed tapered groove 24, in which is inserted a male dovetailed steel casting 25, which is firmly secured to the shell 2 of my device. These are for the purpose of holding my device to the car and disconnecting it when so desired. In order to handle the same to remove or replace it, I provide said shell with handles 26. (See Figs. 1 and 3).

In changing my device from one end of the car to the other I first disconnect the pin 27 from the foot-lever 13, and I then raise the lever 13 from the arm 14. I then disconnect the pins 28, which pass through the male and female fastenings 23 and 25, and then raise the device therefrom by means of the handles 26.

In placing my device upon a car the upper portion is so set as to have the wheel 5 on a slight angle, as shown by dotted lines at x in Fig. 4. In this manner it will operate the switch no matter how close it is to the rail, and likewise when it is in position, as shown at y , which has just operated the switch in order to travel upon the track 31.

The operation of my invention is as follows: When the operator of the car is desirous of running his car over the straight track, he turns the lever 21, so as to place the wheel in the position as shown in Fig. 1 and at x in Fig. 4. He then presses his foot upon the foot-lever 13, which brings the wheel in contact with the rail, when it strikes the switch, and because of its angle and incline it presses between the rail and switch thereby opening the same. When the switch is in position for a straight run and it is desired to make the curve, the handle 21 is turned to the other side, which brings the wheel in the position as shown at y in Fig. 4, and likewise opens the switch, as therein shown, permitting the car to switch over the curve. Just as soon as the foot-pressure is released the tendency of the spring 12 forces

the device upward in its normal position, which is entirely out of the way of any obstruction. If at any time the wheel should be a little out of place, the action of the spring 8 allows the wheel to adjust itself to the correct location.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an improved device for operating railway-switches composed of a shell, movably secured to the car, said shell being provided at its upper portion with a movable head, said movable head adapted to turn the vertical tube, by means of a feather or key, formed on said tube, a handle or lever hinged to said head which turns the head and locks the same when lowered in the slots formed in the stationary part of the head which is held to the shell by a set-screw or other means, said tube being guided up and down, and reversed by the handle of said head, and said tube carrying with it a wheel, which is for the purpose of operating or throwing the switch when lowered by a foot-lever, substantially as shown and described.

2. In an improved device for operating railway-switches composed of a tube guided in a shell, a spring placed around said tube, said tube carrying a wheel, said wheel having its one side inclined, and its other side with a right-angular depression, said wheel provided with a bore, a spiral spring placed in said bore, and resting upon the hub of said wheel, said spring pressing against the wheel and bearing, for the purpose of allowing said wheel to adjust itself to the switch when lowered by the foot-lever, substantially as set forth.

3. In an improved device for operating railway-switches composed of a shell, said shell being provided with steel castings, which fit in the steel castings secured to the car, handles mounted upon said shell, for handling the same, a tube placed through said shell, said tube provided with a feather, or key, which rides in a keyway formed in the movable head, said head operated or moved by a lever hinged thereto, said head movably guided in a collar firmly secured to the shell, for the purpose of setting the wheel at any angle, slots formed in said collar in which the lever rests to hold said wheel said lever moving the wheel around bringing the incline on the other side, and a spring placed in said wheel, for the purpose of allowing its adjustment, substantially as set forth.

4. In an improved device for operating railway-switches composed of a shell provided with inclined dovetail steel castings which fit in inclined dovetail recesses formed in a steel casting secured to the car, for holding the same, said shell provided at its upper portion with a head, movable in a collar, said collar secured to the shell by a set-screw or other means, the movable head provided with a keyway, said keyway provided for the insertion of a feather formed on the tube, and for the purpose of moving said tube, a collar secured

to said tube and which rests upon a spring for the purpose of raising the wheel when the foot is released, said rod lowered by an arm placed around said tube on which is placed the foot-rod, a wheel mounted on a shaft held by said tube, said wheel having inclined and right-angular-depressioned faces, a bore formed in said wheel for the insertion of a spring, said spring adapted for the purpose of providing for the lateral motion of the car, substantially as set forth.

5. In an improved device for operating railway-switches composed of a shell, detachably secured to a car, said shell being carried and held in dovetailed steel castings carried by the car, a tube or rod located in said shell, said tube guided in and reversed by a movable head, a key secured to the said tube which rides in a keyway formed in the movable head, and the said head and tube or rod reversed

by a lever or handle hinged to the head, said handle or lever adapted to rest or lock itself in slots formed on the stationary portion of said head, which is adjusted to place the wheel at any desirable angle to the rails or switch, a wheel carried by said tube or rod, and provided with a bore or depression, a spring placed in said bore or depression, and resting upon the hub of said wheel for the purpose of allowing said wheel to adjust itself to the switch, and provide for the vibration or lateral movement of the car, substantially as shown and described.

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

JOHN A. MARSH.

Witnesses:

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GEO. F. LANE.