

R. Y. PARTIDA.
 AUTOMATIC RAILWAY SWITCH DEVICE.
 APPLICATION FILED OCT. 18, 1909.

963,642.

Patented July 5, 1910.

2 SHEETS—SHEET 1.

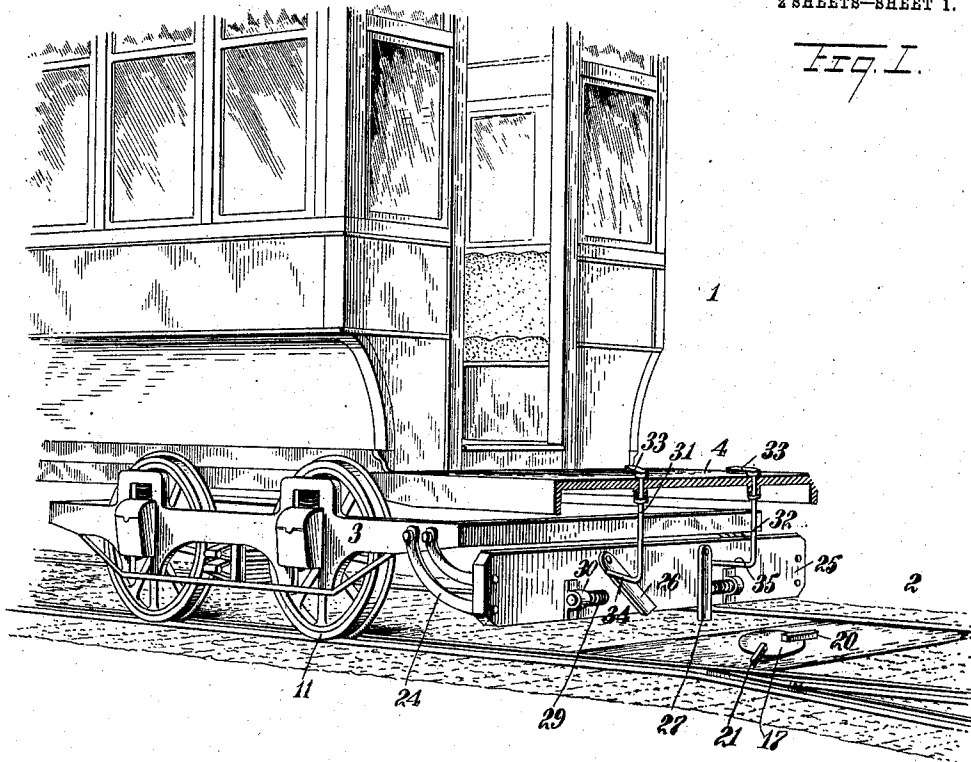
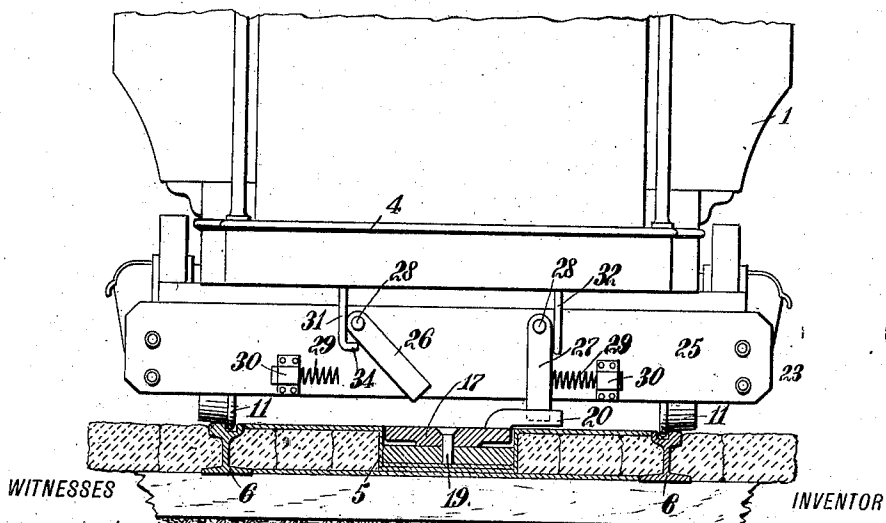


Fig. 2.



WITNESSES
 H. J. Walker

J. D. Amma

INVENTOR
 Rafael Y. Partida
 BY
 Munroe
 ATTORNEYS

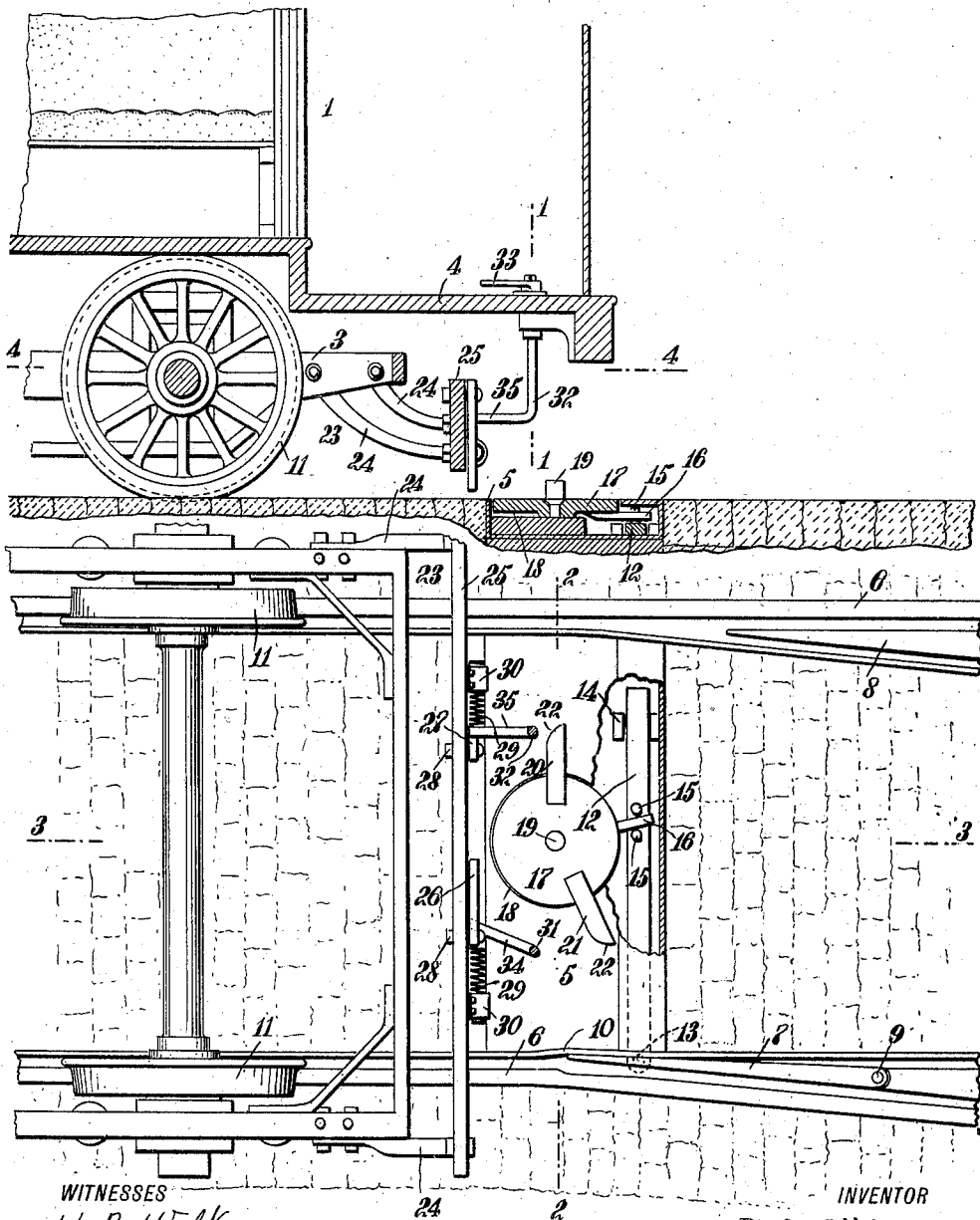
R. Y. PARTIDA.
AUTOMATIC RAILWAY SWITCH DEVICE.
APPLICATION FILED OCT. 16, 1909.

963,642.

Patented July 5, 1910.

2 SHEETS—SHEET 2.

Fig. 3.



WITNESSES

H. J. Walker

J. D. Ammer

Fig. 4.

INVENTOR

Rafael Y Partida

BY

Mum & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

RAFAEL YGNACIO PARTIDA, OF TORREON, MEXICO.

AUTOMATIC RAILWAY-SWITCH DEVICE.

963,642.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed October 16, 1909. Serial No. 522,969.

To all whom it may concern:

Be it known that I, RAFAEL YGNACIO PARTIDA, a citizen of the Republic of Mexico, and a resident of Torreon, Mexico, have invented a new and Improved Automatic Railway-Switch Device, of which the following is a full, clear, and exact description.

This invention relates to devices for controlling a railway switch.

It is particularly useful in connection with electric railroads or tramways in which the rolling stock comprises cars operated from their forward platforms.

The object of the invention is to provide a construction which will enable a switch to be opened or closed from the platform of the car so that the car may pass on or off the switch without requiring the motorman to leave the platform to open or close the switch.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective showing the forward end of a car, representing the forward portion of the platform cut away so as to illustrate the construction and mode of operation of the switch-controlling devices carried by the car, the car platform being represented as cut away on the line 1—1 of Fig. 3; Fig. 2 is an elevation of the car, the road-bed being shown in cross section so as to illustrate more fully the construction and operation of the device, the section being taken on the line 2—2 of Fig. 4; Fig. 3 is a vertical section through the forward end of the car on the line 3—3 of Fig. 4; and Fig. 4 is a horizontal section taken at the forward end of the car about on the plane of the line 4—4 of Fig. 3.

Referring more particularly to the parts, 1 represents the car and 2 represents the track to which my invention is applied. The car may be of any common construction, comprising a truck-frame 3, and having the usual forward platform 4 upon which the motorman stands in operating the car.

In applying my invention, I provide in the track 2, a track-box 5 which is elongated

transversely of the track and fills the space between the rails 6. The track may be formed with a movable switch point 7 at one side, and a fixed switch point 8 at the other side. The switch point 7 is mounted to swing in a horizontal plane on a pivot pin or bolt 9, as shown. The extremity of the switch point 7 when in the position shown in Fig. 4, lies against the guard flange 10 of the right-hand rail, so that the wheels 11 of the car will pass on to the siding. When the switch point occupies its opposite position, that is, when it lies against the main flange or head of the rail, the switch is closed. Near the extremity of the switch point 7, a shifting bar 12 is pivotally attached to the switch point, and this bar is mounted in the track-box 5 and extends transversely of the track, as indicated. Near its end which is remote from the pivot pin 13 which connects it with the switch point, guide lugs 14 are provided which guide the bar so that it may be slid longitudinally, that is, transversely of the track. On the upper face of the shifting bar 12, a pair of pins 15 are provided, and between these pins a dog 16 is received, which dog extends radially from a wheel 17, said wheel 17 being rotatably mounted in the upper face of the track-box 5, as shown. The track-box 5 is formed on its upper face with a circular pocket or recess 18, and the wheel 17 rotates on the central pivot 19. As indicated in Fig. 3, the dog 16 is disposed on the under side of the wheel 17. On the upper side of the wheel 17, radially disposed trip arms 20 and 21 are provided which are arranged nearly diametrically opposite to each other. When the switch is in the position shown in Fig. 4, that is, when the switch is open, the arm 20 extends substantially parallel with the shifting bar 12 and projects transversely of the track. The ends of the arms 20 and 21 which are disposed toward the direction from which the car approaches, are cut away so as to form rounded noses 22, the purpose of which will appear more fully hereinafter.

To the forward extremity of the truck-frame 3, I attach a trip frame 23, which frame comprises bracket arms 24 which are secured rigidly to the side bars of the truck-frame near the forward end thereof. These bracket arms 24 are connected by a trip bar 25 which extends transversely of the track, as shown. Near the forward face of this

trip bar 25, a pair of triggers 26 and 27 are disposed, which triggers are simply in the form of flat bars which hang down on the forward face of the trip bar 25, being suspended from fixed studs or pivots 28. On the forward side of the trip bar 25, and adjacent the outer edges of the triggers 26 and 27, horizontal coil springs 29 are provided, the outer ends of the said springs being supported in brackets 30, secured to the bar 25, as shown. These springs 29 are arranged so that when the triggers 26 and 27 are hanging in a vertical position the ends of the springs lie against the outer edges of the triggers, as illustrated at the right in Fig. 2. When the triggers are hanging down, as suggested, their lower ends are adapted to come in contact, respectively, with the trip arms 20 and 21.

I provide means for swinging the triggers laterally, as indicated at the left in Fig. 2, so as to prevent them from coming in contact with the trip arms. For this purpose I mount in the car platform 4, a pair of spindles 31 and 32 which extend vertically downward. On the car platform these spindles are provided with fixed levers 33 which enable the spindles to be rotated, as will be readily understood. The lower ends of the spindles are bent so as to form fingers 34 and 35. The finger 34 lies adjacent to the outer edge of the trigger 26, whereas the finger 35 lies adjacent to the outer edge of the trigger 27. As illustrated in Figs. 1 and 2, when the spindle 31 is rotated by the motorman's foot the finger 34 will force the trigger 26 out of alinement with its corresponding trip arm. This renders this trigger inoperative, but leaves the trigger 27 in operative position. It will therefore be seen that in the operation of the device, both the triggers are normally in an inoperative position, but the trigger which is to be operated is thrown down when desired to an operative position. The effect of this mode of operation can be seen clearly from an inspection of Figs. 2 and 4. Suppose that the car is approaching the switch from the left, the switch being open, suppose also that the car is to pass along the main track; in order to accomplish this, the trigger 27 is shifted to its operative position; when the trigger 27 strikes the arm 20 it pushes the arm 20 forwardly and rotates the wheel 17 on its pivot 19 through the medium of the dog 16, the wheel will shift the shifting bar 12 toward the right and move the switch point 7 toward the right; this closes the switch. During this rotation of the wheel 17, the trigger 27 is in contact with the rounded nose 22 of the arm, and as the rotation continues the arm advances into an inclined position, such as that shown by the arm 21. In this way the inclined nose will exert a tendency to swing the trig-

ger 27 outwardly on its pivot, compressing its spring 29. In this way the trigger is enabled to pass the trip arm.

Special attention is called to the fact that when the arm 20 is struck by the trigger, this arm is disposed transversely of the track, but as the rotation takes place the arm becomes inclined. In this way the position of the arm when first struck by the trigger, does not tend in any way to swing the trigger, but as the arm becomes inclined it does tend to swing the trigger and release it from the arm.

The springs 29 have a tendency to prevent the triggers from commencing to swing at too early a stage of the movement, that is, they insure that the switch will be fully open or closed before the trigger is released. Of course, if the switch is to be opened instead of closed, the arm 21 will be disposed transversely of the track and the trigger 26 will be operative, while the trigger 27 will be left in its inoperative position.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. In a device of the class described, in combination, a track having a movable switch point, a rotatable member mounted in the bed of the track and having a substantially radially disposed trip arm which may extend transversely of the track, means connecting said member with said switch point for controlling the switch, and a trigger mounted on the car and adapted to move transversely of the track, said trigger being arranged to strike said trip arm and affording means for moving said trip arm into an inclined position, said trip arm being adapted to move the said trigger laterally when in said inclined position whereby said trigger may release itself from said arm.

2. In a device of the class described, in combination, a track having a movable switch point, a rotatable member mounted in the bed of the track and having a substantially radially disposed trip arm which may extend transversely of the track, means connecting said member with said switch point for controlling the switch, a trigger mounted on the car and adapted to move transversely of the track, said trigger being arranged to strike said trip arm and affording means for moving said trip arm into an inclined position, said trip arm being adapted to move the said trigger laterally when in said inclined position whereby said trigger may release itself from said arm, and resilient means tending to resist the lateral movement of said trigger.

3. In a device of the class described, in combination, a track having a movable switch point, a wheel rotatably mounted in the track bed and having substantially ra-

5 dially disposed trip arms, means connecting
said wheel with said switch point for con-
trolling the same, triggers pivotally sup-
ported on the car and adapted to swing
10 laterally, said triggers being adapted to en-
gage said arms respectively, to rotate said
wheel, said arms affording means for mov-
ing said triggers laterally when said arms
have been moved into an inclined position
15 by said triggers, and springs coöperating
with said triggers and tending to resist the
lateral movement thereof by said arms.

4. In a device of the class described, in
combination, a track having a movable
15 switch point, a wheel rotatably mounted in
the bed of the track and having substan-
tially radially disposed arms, said arms pre-
senting rounded noses on their ends at the
side from which the car approaches, means
20 connected with said wheel for operating said
switch point, a cross bar carried by the car,
triggers pivotally attached to said cross bar
and adapted to swing transversely of the
track, the lower ends of said triggers being
25 adapted to engage respectively, with said
rounded noses, and means carried by the
car for controlling said triggers, said trip

arms being arranged so that one or the other
of said trip arms is disposed transversely of
the track when said switch point is in its 30
opened or in its closed position.

5. In a device of the class described, in
combination, a track having a movable
switch point, a wheel rotatably mounted in
the bed of the track and having substan- 35
tially radially disposed arms, said arms hav-
ing rounded noses at the ends thereof,
means for controlling said switch point from
said wheel, a transverse bar carried by the
car, a pair of triggers pivotally mounted on 40
the forward side thereof, springs mounted
on said bar and tending to resist the lateral
swinging movement of said triggers trans-
versely of the track, and means for control-
ling said triggers from the car platform, 45
said triggers being adapted in their vertical
position to engage said arms respectively.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

RAFAEL YGNACIO PARTIDA.

Witnesses:

DIONISIO ALCALÁ,
F. A. PORTER.