

R. I. PARTIDA.
AUTOMATIC RAILWAY SWITCH DEVICE.
APPLICATION FILED AUG. 19, 1910.

978,639.

Patented Dec. 13, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

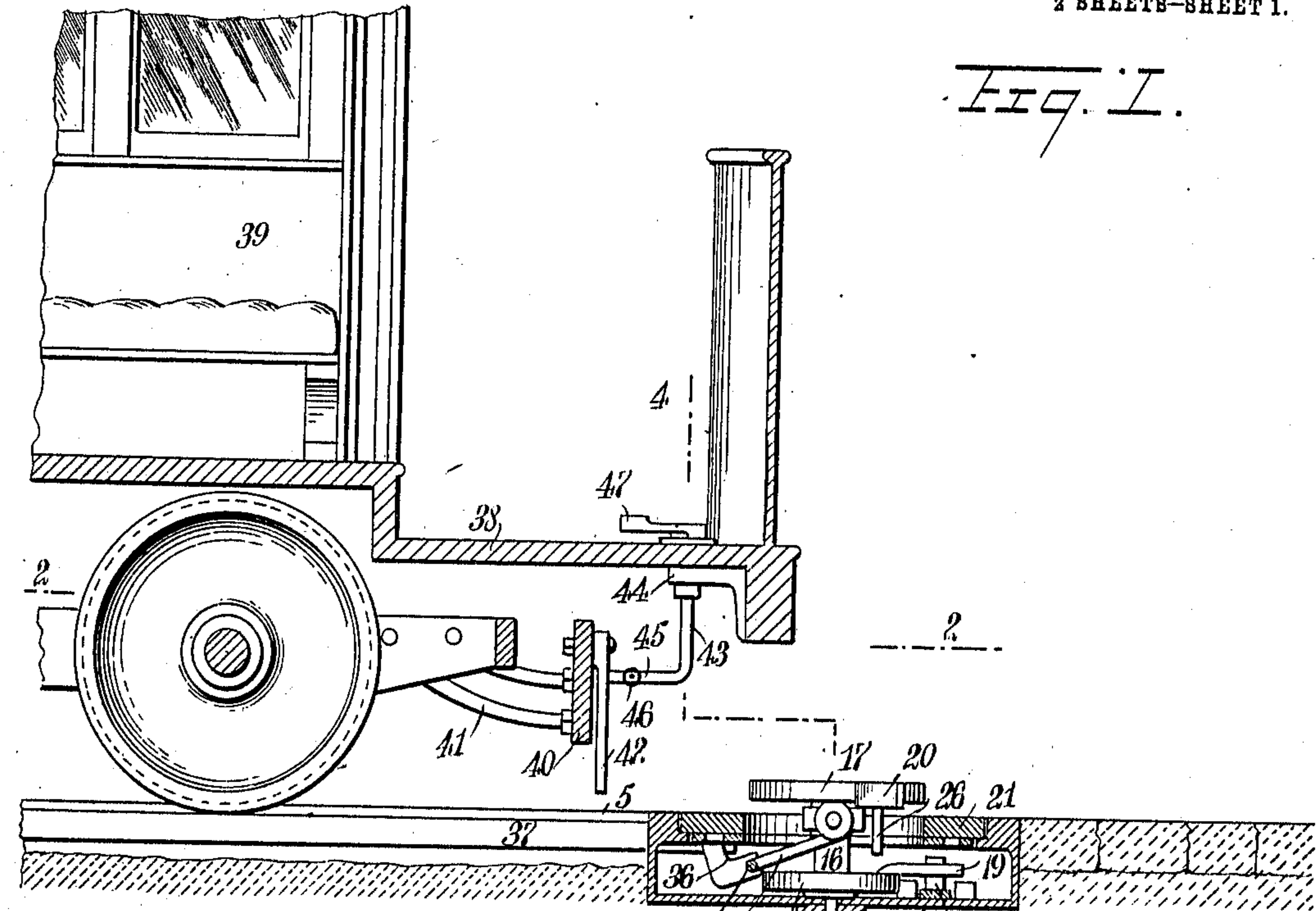
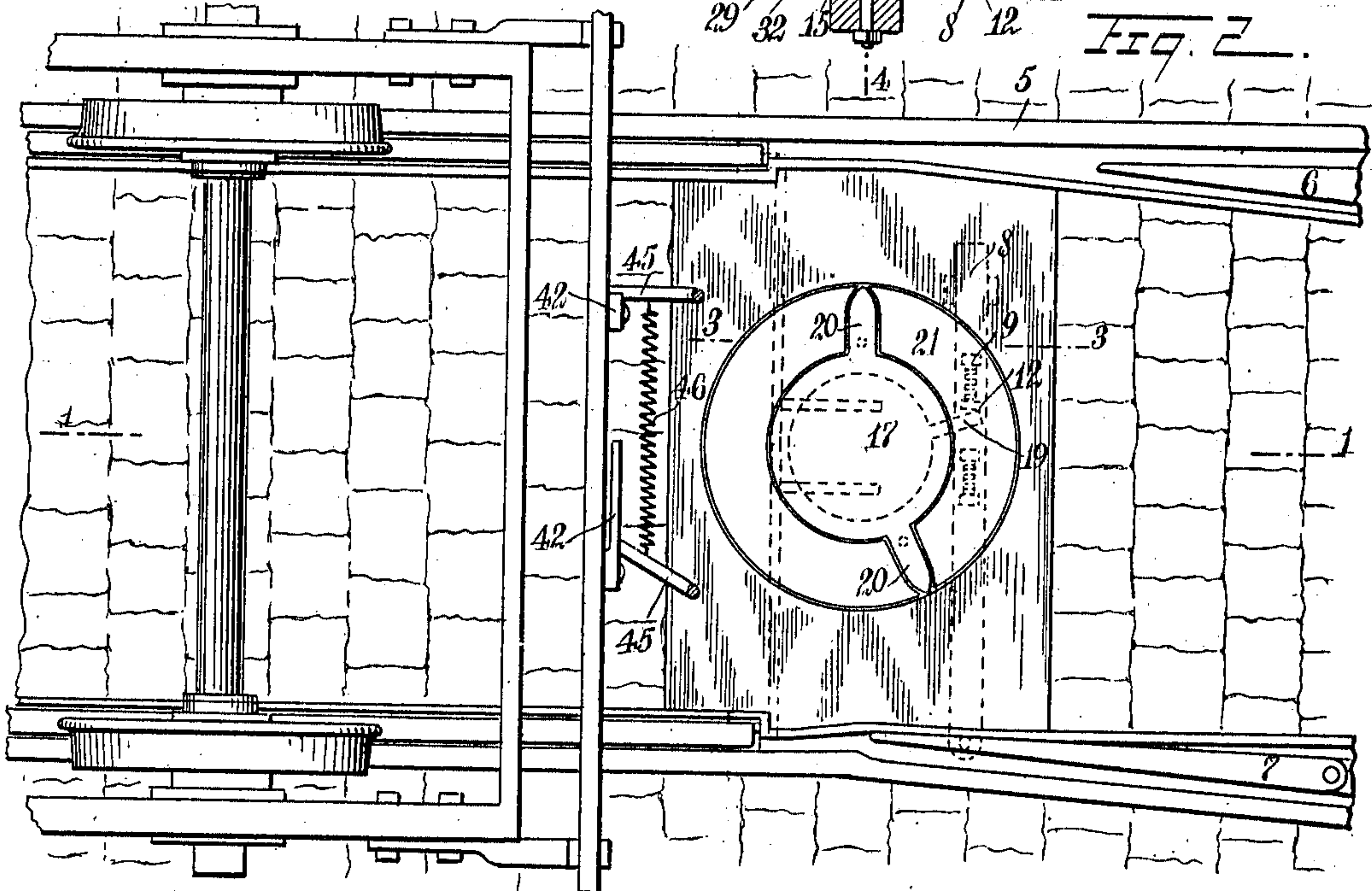


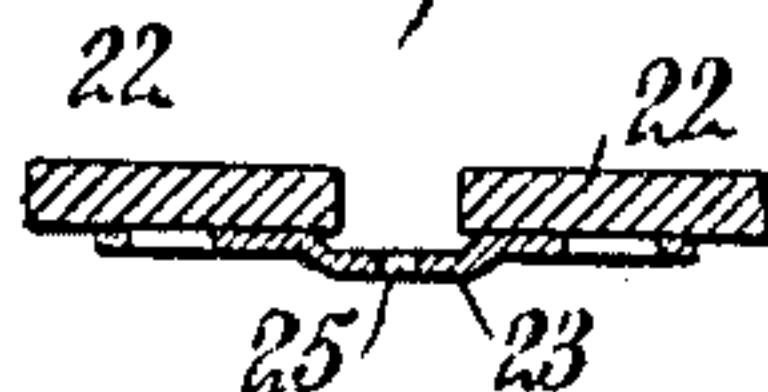
Fig. 2.



WITNESSES:

H. J. Walker
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Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

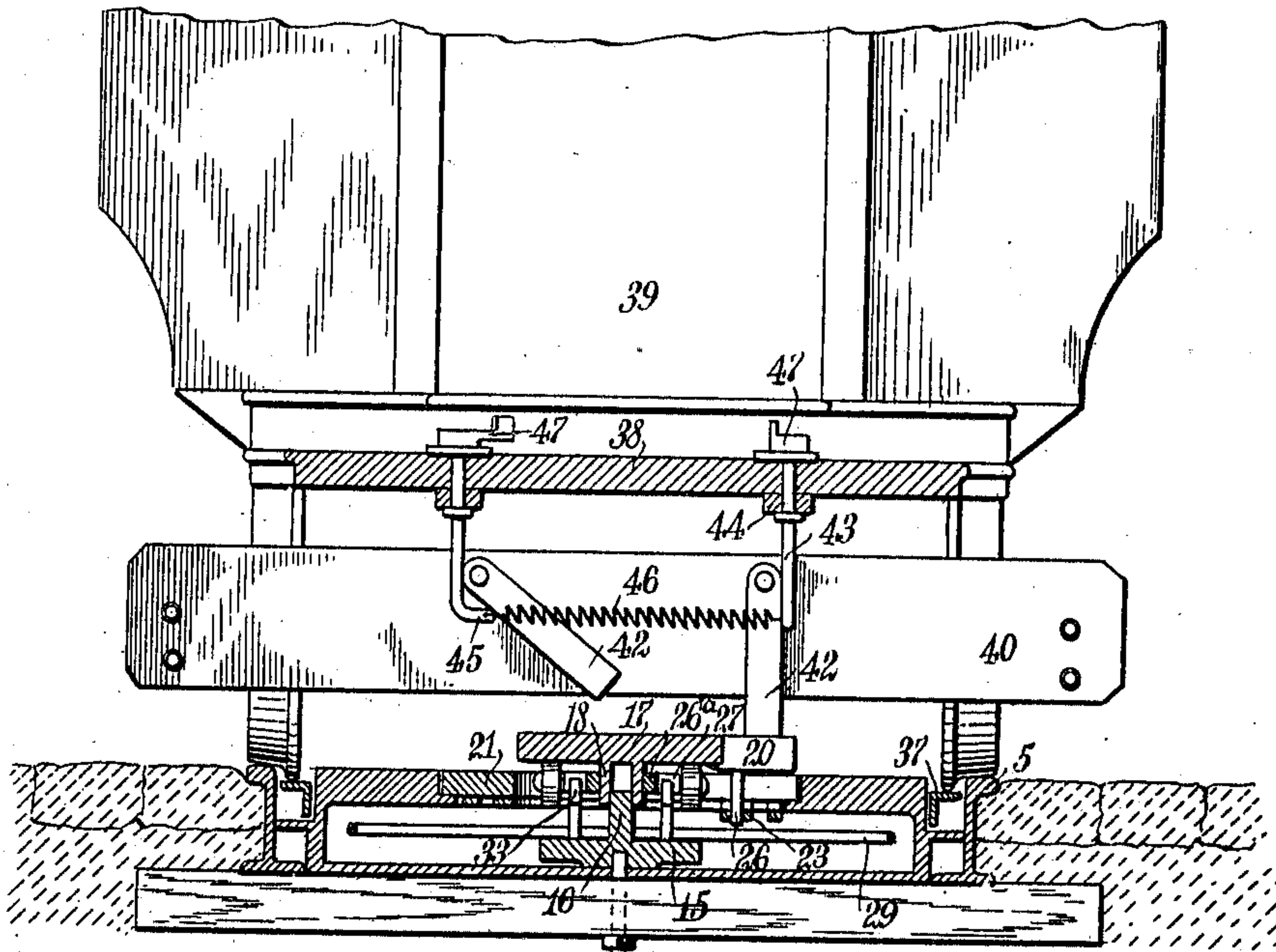


Fig. 5.

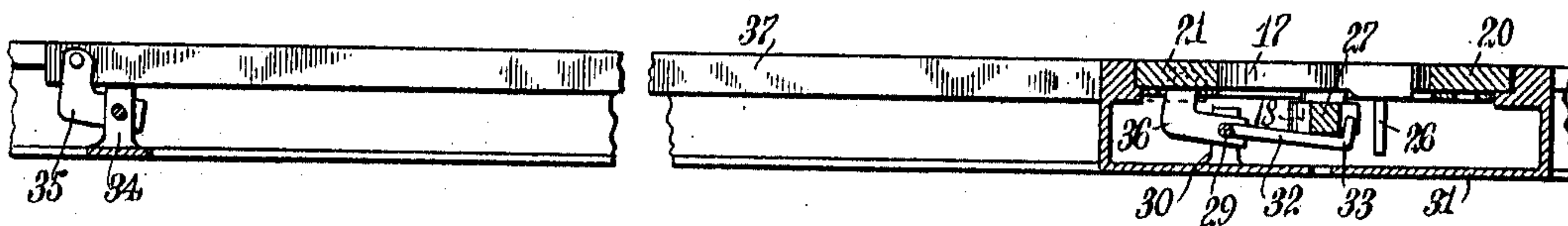


Fig. 6.

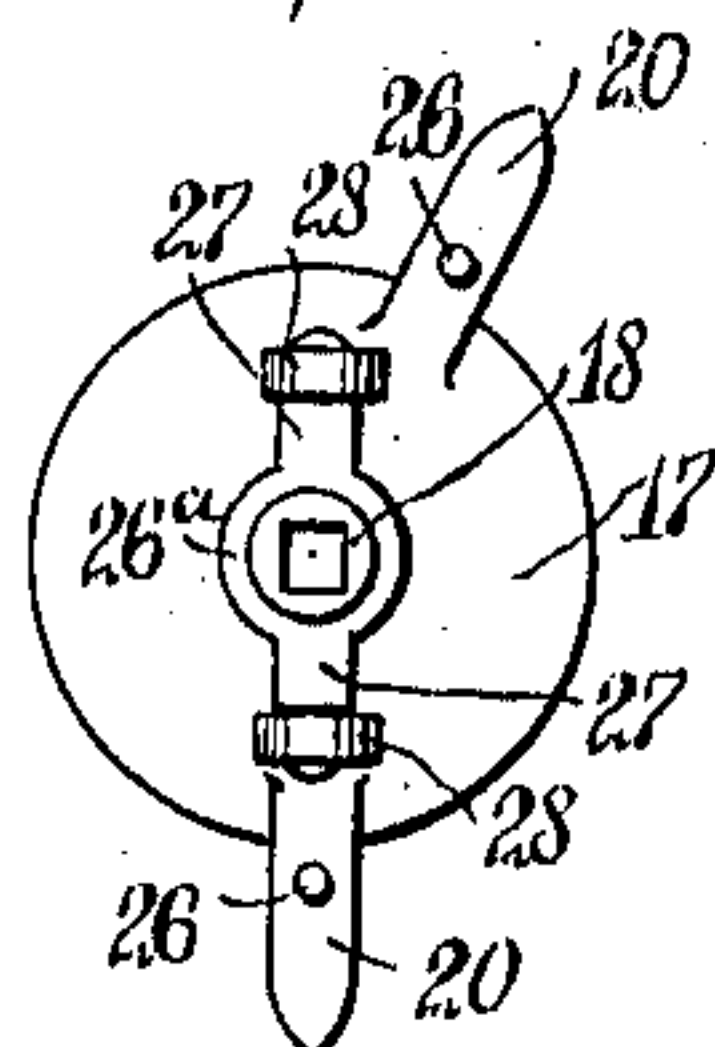
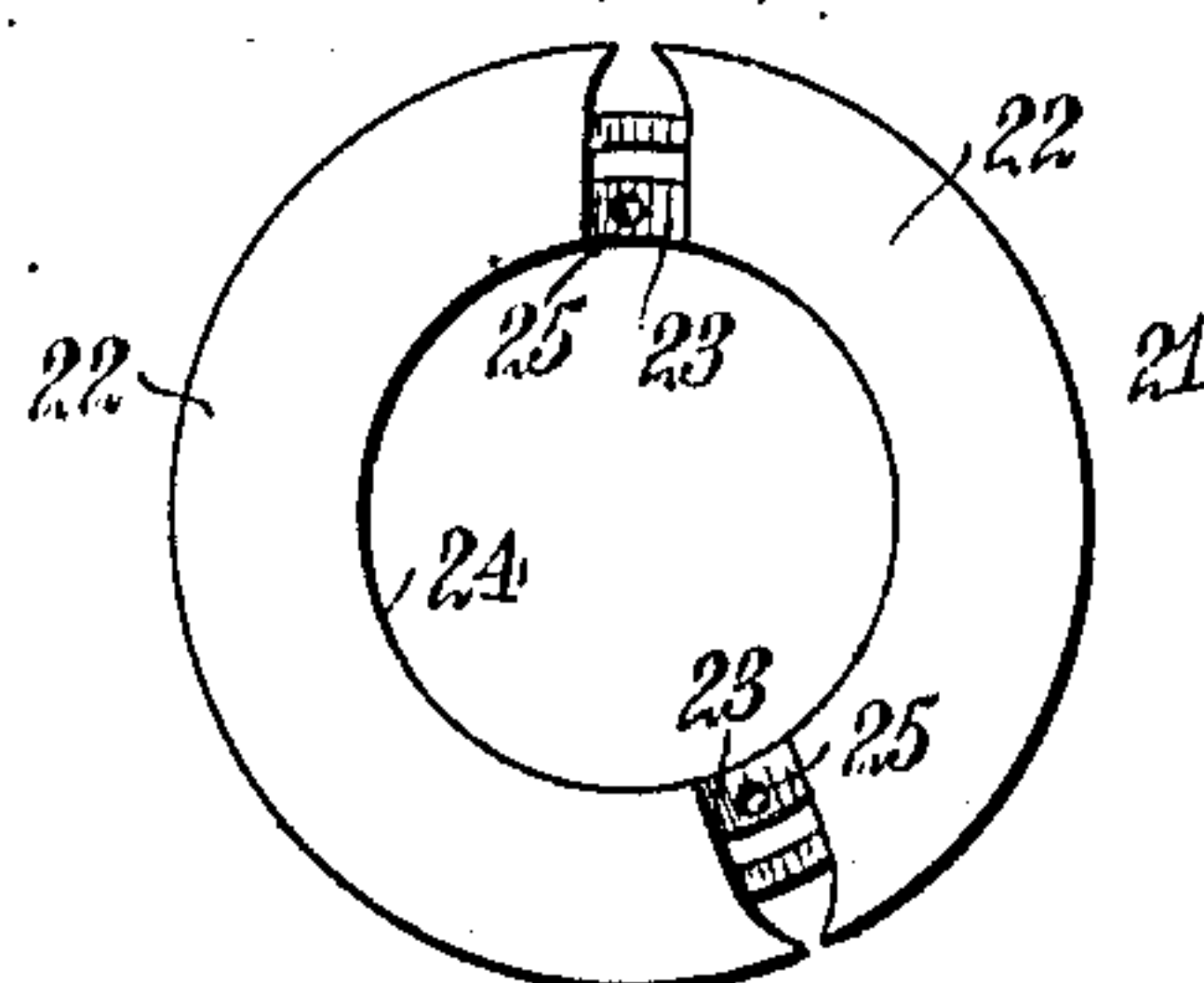
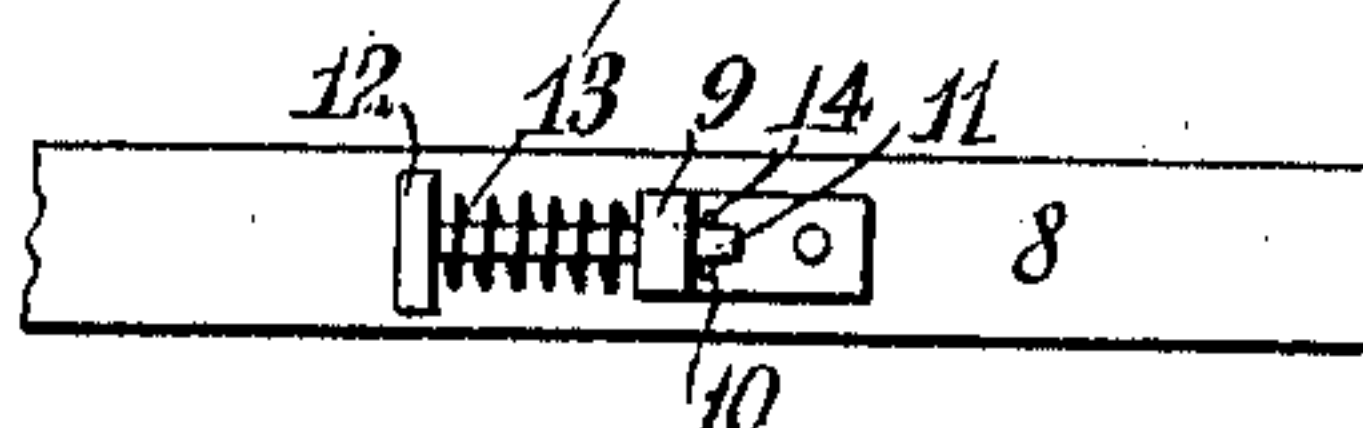


Fig. 7.



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Fig. 8.



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UNITED STATES PATENT OFFICE.

RAFAEL IGNACIO PARTIDA, OF TORREON, MEXICO.

AUTOMATIC RAILWAY-SWITCH DEVICE.

978,639.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed August 19, 1910. Serial No. 577,908.

To all whom it may concern:

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

My invention relates to automatic railway switch devices, and it has for its object to improve the means, which is the subject-matter of the Letters Patent issued to me on July 5, 1910, under No. 963,642, so that the trip arms which are engaged by the triggers, are normally disposed out of operative position and are raised to operative position by means actuated by contact with the wheels of a car.

Another object of the invention is to provide the shifting bar with members to be engaged by the dogs which are held yieldingly relatively to the shifting bar, so that the mechanism will not be damaged when, for any reason, any of the movable parts are prevented from operating.

Still other objects of the invention will appear in the following complete description.

In this specification I will describe the preferred form of my invention, it being understood that the scope of the invention is defined in the appended 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 views, and in which—

Figure 1 is a sectional view on the line 1—1 of Fig. 2; Fig. 2 is a sectional view on the line 2—2 of Fig. 1; Fig. 3 is a sectional view on the line 3—3 of Fig. 2; Fig. 4 is a sectional view on the line 4—4 of Fig. 1; Fig. 5 is a fragmentary sectional view showing the bars adapted to be engaged by the wheels, with the means connecting these bars with the member carrying the trip arms, for raising the said member; Fig. 6 is an inverted plan view showing the member carrying the trip arms; Fig. 7 is a plan view of the casing member, below the plane of which the member carrying the trip arms is normally disposed; and Fig. 8 is a fragmentary view of the shifting bar, showing the means provided to be engaged by the dog.

By referring to the drawings, it will be

seen that a track 5 is provided, having a fixed switch point 6 and a movable or pivoted switch point 7. A shifting bar 8 is articulated to the pivoted switch point 7, two upwardly-disposed lugs 9 being secured to this shifting bar 8, these lugs having orifices 10 in which are disposed shanks 11, mounted on the contact members 12. Springs 13 are provided, which are disposed between the contact plates 12 and the lugs 9. As will be understood by referring to the drawings, two of these lugs 9 are provided with two contact plates 12, having the shanks 11, respectively, and two springs 13 are provided for holding the contact plates yieldingly extended from the lugs 9. Pins 14 are disposed in the terminals of the shanks 11, to limit the movement of the contact plates 12 when they are pushed away from the lugs 9 by the springs 13.

In an opening between the tracks, there is pivoted a member 15, having an upwardly-disposed stud 16, which is angular in cross section, a companion member 17 being provided, having a depending sleeve 18, the opening in which is angular in cross section, to fit the stud 16. The member 15 has a dog 19, which is disposed between the contact members 12. The member 17 has two extending trip arms 20. The member 17 is normally disposed below the plane of a casing member 21 which is formed by two members 22, which are held together by web members 23, which are secured to the undersides of the members 22. This casing member 21 has a central opening 24, through which the member 17 is adapted to move upwardly. The web members 23 have orifices 25 in which are disposed depending pins 26 secured to the trip arms 20. A collar 26^a is provided, in which the sleeve 18 is disposed, this collar 26^a having trunnions 27 with knobs 28 at their outer ends. A rock shaft 29 is pivoted to lugs 30 secured to a box or casing member 31, in which the members 15 and 17 and the thrust bar 8 are disposed, arms 32 being secured to this rock shaft, the arms 32 having hooks 33 at their terminals, which are disposed under and which engage the trunnions 27. At a distance from the lugs 30, lugs 34 are secured to the roadbed, bell crank levers 35 being pivoted to these lugs 34 and bell crank levers 36 being pivoted to the shaft 29. These bell crank levers 35 and 36 are disposed one at each side of the track bars 37, the track.

bars 37 being articulated to the upper arms of the bell crank levers 35 and 36, respectively. Under the forward platform 38 of a car 39, a trip bar 40 is disposed, this trip bar 40 being connected with the car by means of brackets 41. Two triggers 42 are pivoted to the front of this trip bar 40, spindles 43 being journaled in bearings 44 in the forward platform 38 of the car 39, these spindles 43 being provided with fingers 45, which are disposed, one against the outer side of each of the triggers 42. A spring 46 is provided, this spring 46 connecting the fingers 45. To the upper terminals of the spindles 43 are secured levers 47.

As will be readily understood, the member 17 is normally disposed below the plane of the top of the casing 22. When the car 39, traveling on the track 5, reaches the bars 37, the flanges on the car wheels will contact with the said bars 37 and depress them, which will move the upper arms of the bell crank levers 36 downwardly, thereby rocking the shaft 29 and raising the hooks 33 on the arms 32. When these hooks 33 are raised, they will raise the member 17, inasmuch as the said hooks engage the trunnions 27. As the member 17 is raised, the trip arms 20 are disposed at a distance above the casing 22 where they may be engaged by the triggers 42. The motorman, by means of the levers 47, which he may move with his foot, is able to turn either of the spindles 43, so that one of the fingers 45 will be moved outwardly, thereby permitting the trigger 42 to move to a vertical position, so that its lower terminal may engage one of the trip arms 20. When the said trigger 42 engages the said trip arm 20, the trip arm 20, with the member 17, will be rotated as the car progresses, and inasmuch as the member 17 is connected with the casing 21 by means of the pins 26, and as it is also connected with the member 15 by means of the sleeve and stud which have been described, the casing 21 and the member 15 will be rotated with the member 17. As the member 15 is rotated, the dog 19 secured thereto, will press against one of the contact plates 12 to move the thrust bar 8 so that the pivoted switch point 7 will be moved relatively to the track, the springs 13 being so constructed that they will prevent the movement of the contact members 12 relatively to the lugs 9, except in abnormal cases when, because of some injury or obstruction, the movement of the thrust bar 8 is prevented.

It will be understood that the two trip arms 20 are provided, so that either one of the triggers 42 may be permitted to assume an operative position to move its companion trip arm and the members 17 and 15, so that the dog 19 may be moved in either direction to move the switch point 7 either to open or close the switch.

After the car 39 has passed the bars 37, the bars 37 will move upwardly and, if necessary, a spring may be provided to make certain that they so move, to permit the member 17 to descend below the plane of the top of the casing 21. The spring 46 is provided for holding the fingers 45 yieldingly inwardly-disposed, so that the triggers 42 will be normally held in inoperative position.

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

1. In an automatic railway switch device two spindles having fingers respectively, a support for the said spindles, two triggers disposed between and adapted to be operated by the fingers, a spring connecting the fingers, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog to operate the shifting bar, a pivoted member having a dog for engaging the said means, means for operating the pivoted member, and two trip arms mounted on the last-mentioned means adapted to be engaged by the triggers respectively.

2. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar, adapted to be engaged by a dog to operate the shifting bar, a pivoted member having a dog, for engaging the said means, a second member adapted to be raised relatively to the body of the first member, the second member having means for rotating the first-mentioned member on its pivot, a trip arm on the second member, adapted to be engaged by a car, a bar movable relatively to the track and adapted to be engaged by a car, and means by which the last-mentioned bar is adapted for raising the second member.

3. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, and having a stud angular in cross section, a second member having a sleeve which fits the said stud, adapted to be raised relatively to the body of the first member, a trip arm on the second member, adapted to be engaged by a car, and means for raising the second member.

4. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted

member having a dog for engaging the said means, a second member adapted to be raised relatively to the body of the first-mentioned member, the second member having means for rotating the first-mentioned member on its pivot, a trip arm on the second-mentioned member, adapted to be engaged by a car, a bar movable relatively to the track, adapted to be engaged by a car, a rock shaft, a member connecting the bar with the rock shaft for operating the latter, and an arm secured to the rock shaft for engaging and raising the second-mentioned member.

5. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, a second member having lateral projections, adapted to be raised relatively to the body of the first-mentioned member, the second-mentioned member having means for rotating the first-mentioned member, a bar movably relatively to the track, adapted to be engaged by a car, a rock shaft, a member connecting the bar with the rock shaft, for operating the latter, and arms having hooks, secured to the rock shaft, the hooks being adapted to engage the lateral projections on the second-mentioned member.

6. In an automatic railway switch device a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog to operate the shifting bar, a pivoted member having a dog for engaging the said means, and a stud angular in cross section, a second member having a sleeve fitting the said stud, means for raising the second-mentioned member relatively to the first-mentioned member, a trip arm mounted on the second mentioned member, a bar adapted to be moved relatively to the track and to be engaged by a car, a rock shaft, a member connecting the last-mentioned bar with the rock shaft for operating the latter, and arms having hooks secured to the rock shaft, the arms being adapted to engage and operate the second-mentioned means.

7. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, a second member adapted to be raised relatively to the body of the first-mentioned member, the second member having means for rotating the first-mentioned member on its pivot, a trip arm on the second-mentioned

member, supports, members pivoted to the supports, a bar pivoted to the last-mentioned members, a rock shaft, to which one of the last-mentioned members is secured, and an arm secured to the rock shaft, for engaging and raising the second-mentioned member.

8. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, a second member having vertical pins and means for rotating the first-mentioned member and adapted to be raised relatively to the said first-mentioned member, a trip arm on the second-mentioned member, adapted to be engaged by a member on a car, a casing member having an opening, through which the second-mentioned member is adapted to be moved, and orifices in which the pins are disposed, and means for raising the second-mentioned member.

9. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, a second member adapted to be raised relatively to the body of the first-mentioned member, the second-mentioned member having means for rotating the first-mentioned member, a trip arm on the second-mentioned member, adapted to be engaged by a car, and means for raising the second-mentioned member.

10. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, a second member having vertical pins and means for rotating the first-mentioned member and adapted to be raised relatively to the said first-mentioned member, a trip arm on the second-mentioned member, adapted to be engaged by a member on a car, a casing member having an opening, through which the second-mentioned member is adapted to be moved and orifices in which the pins are disposed, means for raising the second-mentioned member, a bar adapted to be moved relatively to the track and to be engaged by a member on a car, a rock shaft, a member connecting the bar with the rock shaft, for operating the latter, and an arm secured to the rock shaft for engaging and adapted to raise the second-mentioned member.

11. In an automatic railway switch device a track having a switch point movable rela-

tively thereto, a shifting bar connected with the switch point, means on the shifting bar adapted to be operated by a dog, a pivoted member having a dog for operating the said means, a second member having vertical pins, and means for rotating the first-mentioned member, and adapted to be raised relatively to the first-mentioned member, a trip arm on the second member adapted to be engaged by a member on a car, a member having an opening through which the second-mentioned member is adapted to be moved, and orifices in which the pins are disposed, and means for raising the second-mentioned member.

12. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means and a stud angular in cross section, the second member having a sleeve fitting the said stud and vertical pins, the second member being adapted to be raised relatively to the first-mentioned member, a trip arm on the second-mentioned member, adapted to be engaged by a member on a car, a casing member having an opening, through which the second-mentioned member is adapted to be moved, and orifices in which the pins are disposed, and means for raising the second-mentioned member.

13. In an automatic railway switch device, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said

means, a second member having vertical pins and means for rotating the first-mentioned member and adapted to be raised relatively to the first-mentioned member, a trip arm on the second-mentioned member, adapted to be engaged by a member on a car, a casing member having a central opening, through which the second member is adapted to be moved and orifices in which the pins are disposed, there being a laterally-extending opening in the casing connected with the central opening, through which the arm is adapted to be moved, and means for raising the second-mentioned member.

14. In an automatic railway switch device, two spindles having fingers, respectively, a support for the said spindles, two triggers disposed between and adapted to be operated by the fingers, a spring connecting the fingers, a track having a switch point movable relatively thereto, a shifting bar connected with the switch point, means mounted on the shifting bar adapted to be engaged by a dog, to operate the shifting bar, a pivoted member having a dog for engaging the said means, a second member adapted to be raised relatively to the body of the first-mentioned member, the second-mentioned member having means for rotating the first-mentioned member, two trip arms on the second-mentioned member, adapted to be engaged by the triggers, respectively, and means for raising the second-mentioned member.

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

RAFAEL IGNACIO PARTIDA.

Witnesses:

ARTURO LA MONT,
JOHN SCHRAM.