

No. 705,164.

Patented July 22, 1902.

A. G. TURCOTTE.  
RAILWAY SWITCH.

(Application filed Jan. 27, 1902.)

(No Model.)

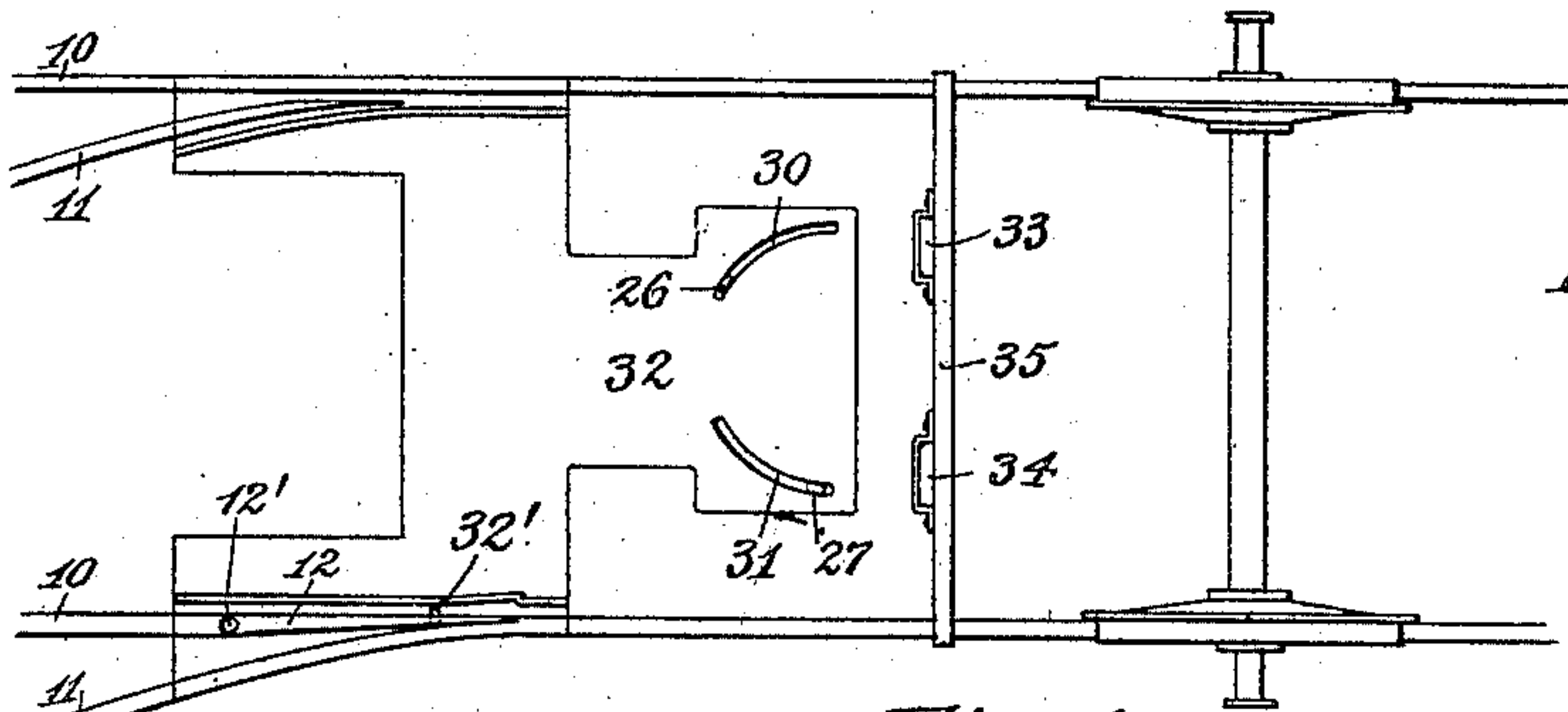


Fig. 1.

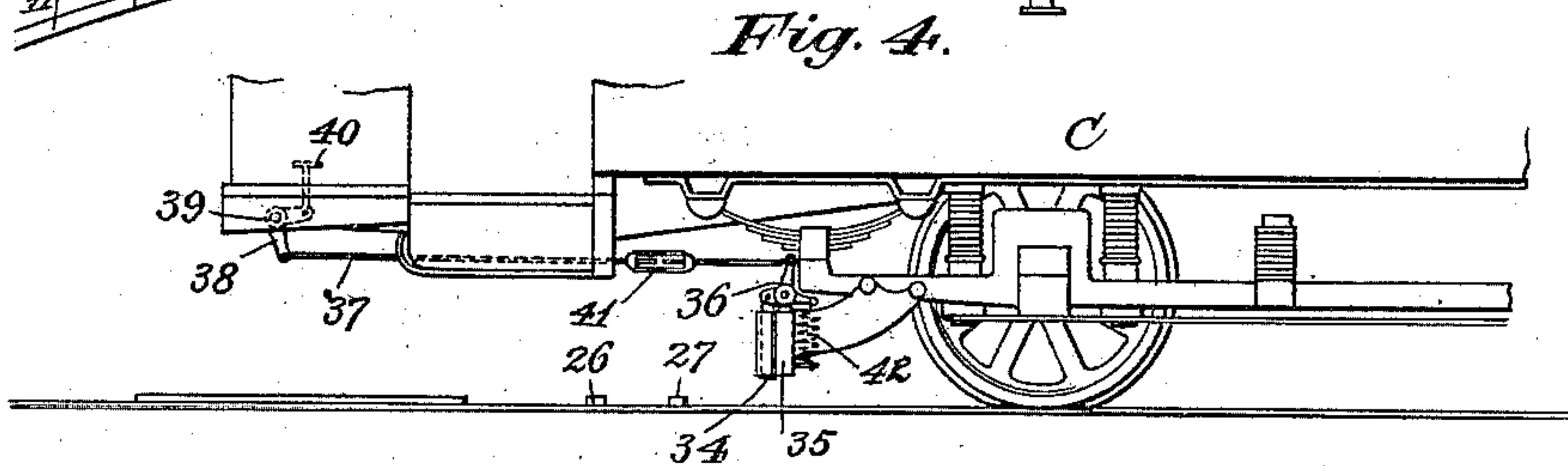


Fig. 2.

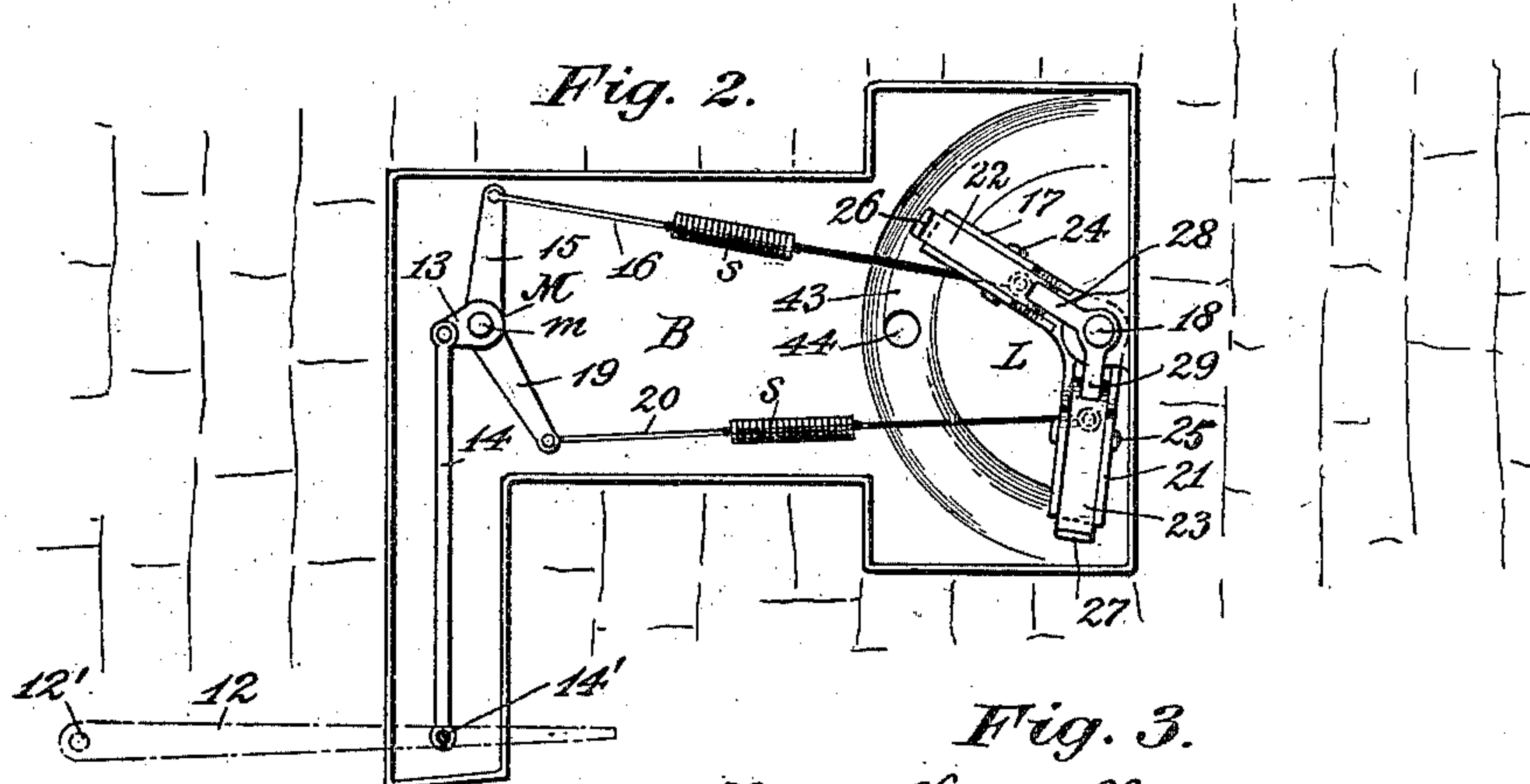


Fig. 3.

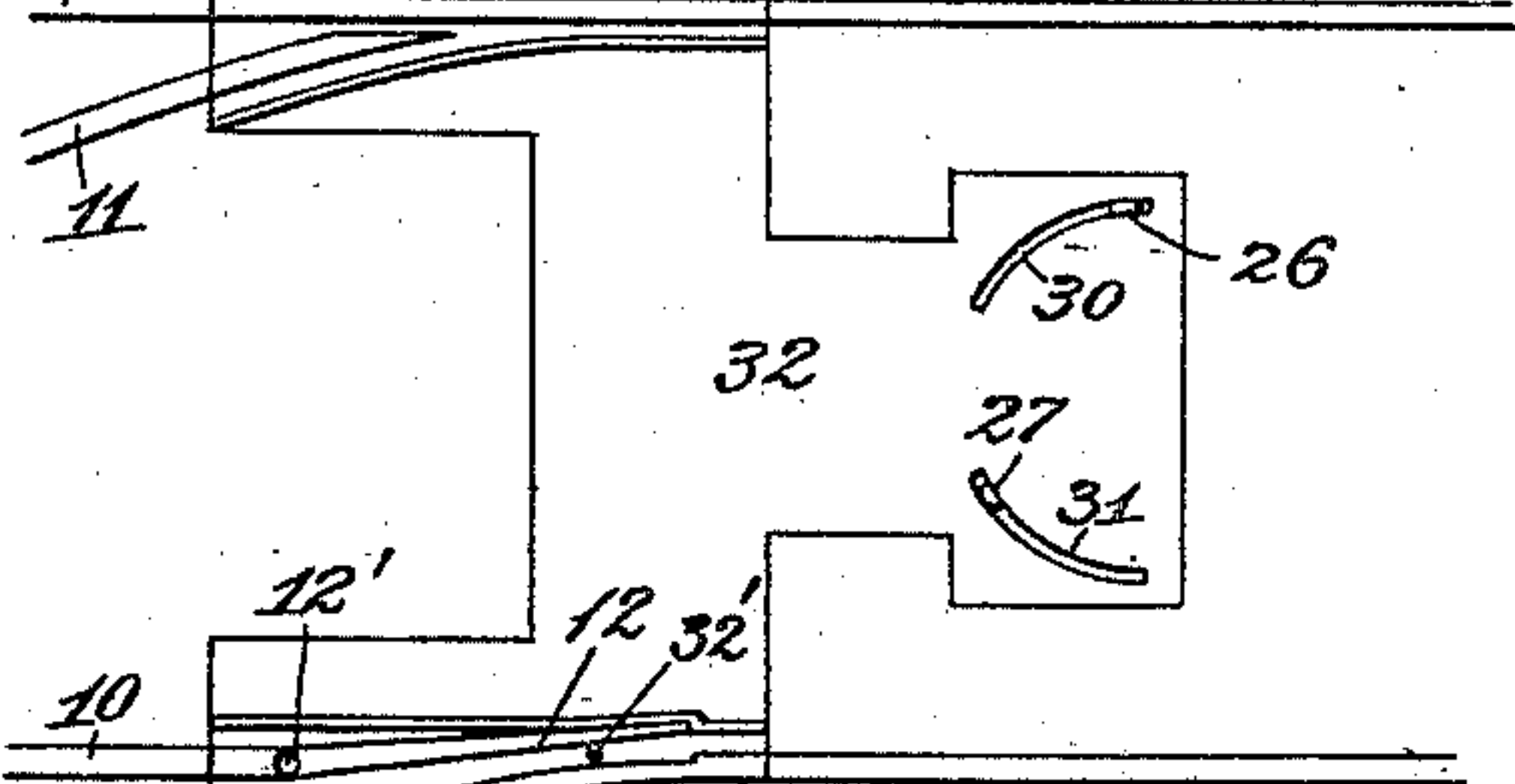
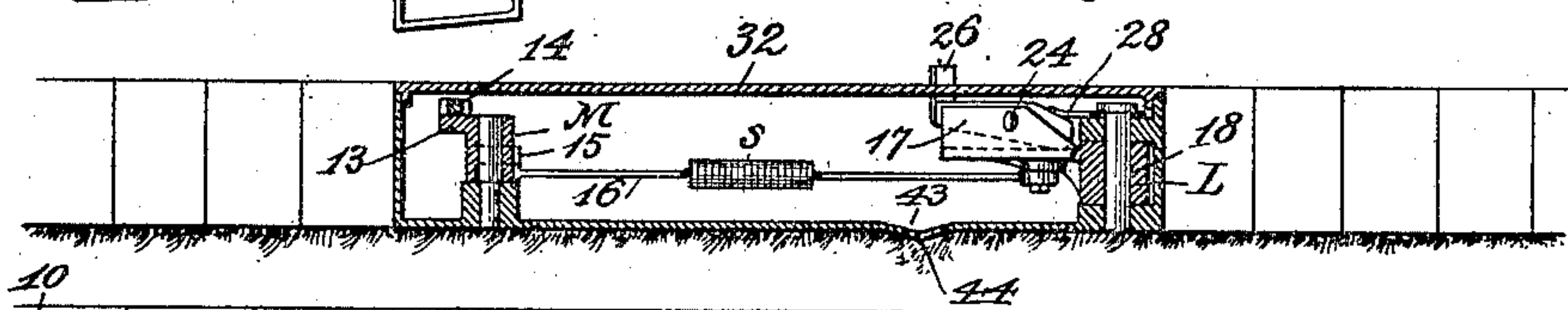


Fig. 5.

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# UNITED STATES PATENT OFFICE.

ALEXANDER G. TURCOTTE, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO HIMSELF, AND NAPOLEON McCCLURE, OF HARTFORD, CONNECTICUT.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 705,164, dated July 22, 1902.

Application filed January 27, 1902. Serial No. 91,439. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER G. TURCOTTE, a citizen of Canada, and a resident of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Railway-Switches, of which the following is a full, clear, and exact specification.

This invention relates to railway-switches, and more particularly to that class thereof which are operated by a device carried on an approaching car and adapted to be placed into its operative position by the motorman; and my invention has for one of its objects the provision of a switch-tongue-operating mechanism comprising an actuating device operable by the movement of the car and having its impact-point longitudinally movable relatively to the track.

My invention has, furthermore, for its object the provision of a pair of such actuating devices which are operable independently of each other for opening and closing the switch-tongue, respectively.

My invention has, furthermore, for its object the provision of a member connected with the switch-tongue and for transforming the forward movements of the actuating members into a movement of said tongue laterally of the track.

Further objects of my invention will be found in the particular construction and organization of the coöperating elements of the mechanism, as will be hereinafter described, and particularly pointed out in the claims.

In its preferred form the entire switch-operating mechanism is inclosed in a box, so that the several parts may be assembled, and the whole apparatus may then be put into place between the track-rails, whereupon the tongue may be connected with said mechanism, as is illustrated in the accompanying drawings, in which similar characters denote similar parts, and in which—

Figure 1 is a top view of my improved switch-operating mechanism as it will appear when in proper position. Fig. 2 shows, on an enlarged scale, the interior of the box containing the mechanism, the top cover having been removed. Fig. 3 is a central longitudinal

section of the box. Fig. 4 shows a fractional side view of a car and illustrates a mechanism for operating the switch-tongue, and Fig. 5 illustrates by comparison with Fig. 1 the switch-tongue thrown over to open the side track.

In the drawings, 10 denotes the main track and 11 the side track, near the junction of which is located a switch-tongue 12, pivoted at 12' to one of said tracks and adapted to be thrown into contact with either track—as, for instance, by a member M, pivoted at *m* and comprising a rocker-arm 13, which may be connected with the switch-tongue 12 by a link 14, pivotally supported on said tongue by a bolt 14' passing through a slot 32' in the cover B. The member M is shown having an arm 15 connected by a connector 16 with an arm 17 of a switch-tongue-actuating device L, pivoted on a vertical axis 18, so that said arm 17 may be oscillated in a horizontal plane. The member M is also provided with an arm 19, which may be connected—as, for instance, by a link 20—with an arm 21, also forming a part of the device L, both of said arms 17 and 21 serving to actuate the member M in opposite directions, and therefore moving the tongue so as to open either the main track or the side track, according to the direction in which the member L is oscillated. The member L, or more particularly the arms 17 and 21 thereof, is so constructed that it may be operated from a car approaching the switch, so that for this reason the particular operating or impact points must project above the top of the road-bed.

Now it is a well-known fact that any projections in the street or road are objectionable features, and for this reason the impact-points of the member L are mounted for vertical movement, so that whenever any downward pressure is brought to bear on said points the latter will sink to the level with the surface of the road, and when the downward pressure on said points is released they will again come into a position to be engaged by an approaching car. Hence I preferably form the arms 17 and 21 substantially U-shaped in cross-section to receive dogs 22 and 23, respectively, said dogs being pivoted, as



at 24 and 25, and having upwardly-projecting ends 26 and 27, adapted to project above the upper surface of the pavement when in their normal position, a spring having resilient arms 28 and 29 being employed to offer a yielding resistance to the depression of the dogs 22 and 23.

All the mechanism thus far described is preferably inclosed in a box B, provided with a cover 32, so that free access may be had to the mechanism when desired, the projections 26 and 27 passing through concentric slots 30 and 31, respectively. The arms 17 and 21 are so disposed relatively to each other that when the projection 27 is to be engaged by an approaching car to turn the switch from the position shown in Fig. 1 into the position shown in Fig. 5 the member M will at first be oscillated very slowly, this oscillation increasing in velocity, provided the speed of the impact-point 27 during its angular movement remains constant. Now it will be seen that inasmuch as the impact-point 27 moves in an arc, the initial point of which is substantially laterally of the track, the movement of said point will be at first substantially longitudinally with the track and then gradually deflect toward the center, and the same conditions are true in regard to the impact-point 26 when the latter is in position shown in Fig. 5.

From the foregoing description it will be seen that the slots 30 and 31 are the only two openings through the cover 32, and since the projections 26 and 27 may be comparatively thin laterally said slots 30 and 31 may be also narrow and yet not interfere with the length of said projections, which of course should be of sufficient strength to withstand the blow of a moving car, and it is evident that all liability of vehicle-wheels dropping into either of the slots will not only be greatly lessened, but will practically be obviated on account of the curvature of the slots.

Inasmuch as rain, snow, and dirt may drop through the slots 30 and 31 into the box B, I preferably form in the bottom thereof a channel or depression 43, substantially in alignment with said slots and provided with an aperture 44, so that all liquid may practically be drained off.

Any suitable mechanism may be employed for operating the device L from the platform of the car, the mechanism illustrated in the drawings comprising a pair of slides 33 and 34, mounted for vertical movement on the guard-board 35, secured to the truck of the car C and of ordinary construction. The slides 33 and 34 are of course movable independently of each other, and inasmuch as the organization of the operating mechanism of both may be duplicates the following description of the device for controlling the slide 34 is deemed sufficient for both.

Pivoted on the board 35 and connected with the slide 34 is an angle-lever 36, connected by a link 37 with another angle-lever 38, pivoted at 39 to the platform of the car and op-

erable by a foot-button 40, and in order to insure accuracy in the positioning of the slide 34 the link 37 may be provided with an adjusting device, shown herein as a turnbuckle 41, while a spring 42 may serve for returning the slides 34, and consequently the button 40, to their normal positions.

The operation of my improved device is as follows: Let it be supposed that the switch-tongue 12 is in the position shown in Fig. 1 and that the approaching car is to take the side track. In that case the button 40 on the left side of the car-platform is depressed, thereby moving the slide 34 downward and bringing the same into position to engage the impact-points 27 on the member L. The forward angular movement of this impact-point of the arm 21 will result in pulling the arm 15 rearward, thus throwing the switch from the position shown in Fig. 1 to that shown in Fig. 5 and opening the side track. In order to avoid breakage in case there should be any obstructions to the movement of the tongue—as, for instance, by dirt or stones—I preferably provide springs S on both the connections 16 and 20, so that the member L may be moved by the car even if the tongue 12 is practically blocked, in which case it will of course become necessary to remove the obstructions before the switch can be thrown. When it is desired to reopen the main track, the slide 33 will be depressed into position for engaging the impact-point 26, the forward movement of which will result in pulling the arm 19 backward, and therefore returning the switch 12 to the position shown in Fig. 1.

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

1. The combination, with a switch-tongue, and an oscillatory member connected therewith; of a horizontally-shiftable device for operating said tongue and having its impact-point longitudinally movable relatively to the track; and a spring interposed between said member and said device.

2. The combination, with a switch-tongue, and an oscillatory member connected therewith; of a pair of horizontally-movable devices for operating said tongue and having impact-points longitudinally movable relatively to the track; and a spring interposed between said member and said devices.

3. The combination, with a switch-tongue, and an oscillatory lever connected therewith; of a box; a cover having concentric slots; a rock-lever resiliently connected with said lever and having at its opposite ends devices, the impact-points of which normally project through said slots, and are longitudinally movable relatively to the track, for shifting said oscillatory lever.

4. The combination, with a switch-tongue, and a shiftable lever for operating said tongue; of devices mounted for yielding movement in a vertical plane and having their impact-points normally project through said



slots, and longitudinally movable relatively to the track; and resilient connections between said lever and said device.

5 5. The combination, with a switch-tongue, of a rock-lever for operating said tongue and having at its opposite ends devices for operating said rock-lever in opposite directions, respectively; and a spring engaging both of said devices, and for permitting the same to  
10 yield downwardly.

6. The combination, with a switch-tongue, and a rock-lever connected therewith and having a substantially U-shaped cross-section; of spring-actuated dogs carried in the

hollow portion of said rock-lever and for moving said lever in opposite directions, respectively. 15

7. The combination, with a switch-tongue, and a rock-lever connected therewith and having a substantially U-shaped cross-section; of spring-actuated dogs pivoted in the hollow portion of said rock-lever and for moving said lever in opposite directions, respectively. 20

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Witnesses:

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