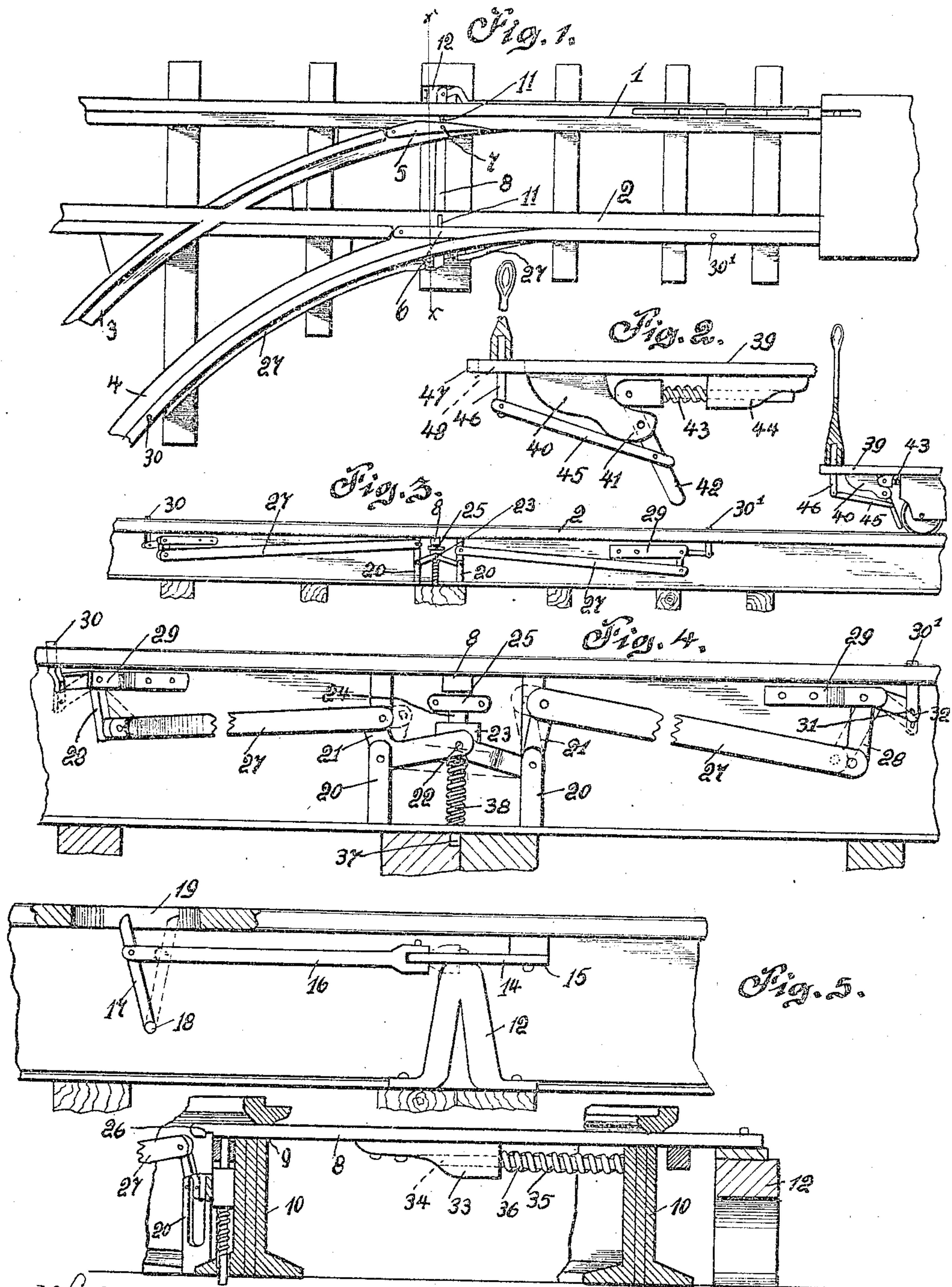


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PATENTED JUNE 13, 1905.

M. F. BURKHART.
SWITCH THROWING MECHANISM.

APPLICATION FILED FEB. 4, 1905.



Witnesses
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Fig. 6.

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SWITCH-THROWING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 792,397, dated June 13, 1905.

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To all whom it may concern:

Be it known that I, MICHAEL F. BURKHART, a citizen of the United States of America, residing at West Newton, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Throwing Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switch-throwing devices, and more particularly to that type of device which is adapted for electric railways and operated manually from the cars traveling upon the railway.

The object of this invention is to provide a simple and effective device which will assure a positive movement of a switch-tongue when the mechanism carried by the car is actuated to throw the switch-tongue in the direction desired.

Another object of this invention is to provide a device of the above type which can be readily embodied in railway systems without reconstructing any portion of the tracks thereof and by simply providing the rolling-stock of the railway with mechanism for operating switch-tongues constructed in accordance with my invention.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, which will be hereinafter more fully described and then specifically pointed out in the claims, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a top plan view of a section of railway having my improved device applied thereto. Fig. 2 is a side elevation view of a portion of a car equipped with my improved switch-throwing mechanism. Fig. 3 is a side elevation view of a track equipped with my improved switch-throwing device, illustrating a car about to actuate the same. Fig. 4 is a side elevation, on an enlarged scale, of a portion of the track illustrated in Fig. 3. Fig. 5 is a similar view, partly in section, of a

track carrying part of my improved actuating mechanism; and Fig. 6 is a transverse sectional view taken on the line *x x* of Fig. 1.

In the accompanying drawings the reference-numerals 1 and 2 designate the rails of a main or straightway track, and 3 and 4 the tracks of a siding, which cuts into the main track. Where the siding-tracks intersect the main tracks I pivotally mount switch-tongues 5 and 6, which are connected by pins 7 to a cross-bar 8, that operates in slots 9 9, formed in the web portion 10 10 of the rails 1 and 2. The pins 7 7 extend down through slots 11 11, formed in the heads of the rails 1 and 2.

At the outer side of the main rail 1 I provide a standard 12, having a bell-crank lever 14 pivoted thereon, the one end of which is connected to the bar 8, as indicated at 15, while the other end thereof is connected by a link 16 to an arm 17, pivotally mounted, as indicated at 18, to the web portion 10 of the rail 1. The upper end of the arm 17 extends within the slot 19, formed in the head of the rail-section 1. The length of the link 16 is sufficient to permit the car to actuate the arm 17 prior to its wheels engaging the switch-tongues 5 and 6.

The side of the rail 2 opposite the standard 12 is provided with brackets 20 20, in which are pivotally mounted angular arms 21 21, the inner ends of which are connected together by a pin 22, which pin also engages the head 23 of a pin 24. This pin 24 passes through a guide-strap 25, secured to the web portion of the rail 2, and the end of said pin 24 is adapted to engage in a notch 26, formed in the underface of the cross-bar 8. The opposite ends of the angular arms 21 21 are connected by curved links 27 27 to bell-crank levers 28 28, which are pivotally mounted in brackets 29 29, carried by the web portion 10 of the rail 2. The ends of the bell-crank levers are pivotally connected to the actuating-pins 30 30' by pins 31, which engage within the slots 32, formed in the lower ends of the actuating-pins 30 30'. The curved links 27 27 are of a sufficient length to extend a considerable distance upon the main track 2 and the siding-track 4, in which tracks the actuating-pins 30 30' are mounted,

said pins extending upwardly through the heads of the rails, as clearly illustrated in Fig 1 of the drawings.

The underface of the cross-bar 8 is provided with a depending bracket 33, having an opening 34 formed therein. The web portion of the siding-rail 3 is provided with an outwardly-extending pin 35, the outer end of which seats in the opening 34 of the depending bracket 33. Mounted upon said pin is a spiral spring 36, which normally holds the switch-tongue 5 in an open position.

The reference-numeral 37 designates a pin carried by the base portion of the rail-section 2, and upon this pin is mounted a spiral spring 38, that is adapted to normally hold the connected ends of the angular arms 21 in an elevated position and the pin 24 in engagement with the cross-bar 8.

Reference will now be had to the rolling-stock adapted to pass over the tracks just described, and in the accompanying drawings I have illustrated the platform of a car as equipped with the switch-throwing mechanism which I preferably employ to actuate the switch-tongues 5 and 6. The platform 39 is provided with a depending bracket 40, having a bifurcated end 41, and in this end of the bracket is pivotally mounted a bar 42, the upper end of which is pivotally connected to a spring-actuated bar 43, mounted in a depending bracket 44, carried by the platform 39. The bar 42 is carried by a link 45 to a lever 46, that is pivotally mounted, as indicated at 47, in a slot 48, formed in the platform 39.

Operation: In Fig. 1 of the drawings I have illustrated the switch-throwing tongues 5 and 6 as being in position to permit a car to continue upon the main tracks 1 and 2, and should it be desired to pass upon the siding-tracks 3 and 4 the operator of the car moves the lever 46 toward the body portion of the car, which causes the bar 42 to be lowered sufficiently to engage within the slot 19 when the car is directly above said slot. When the bar 42 strikes the bar 17, said bar 17 is moved to the position illustrated in dotted lines of Fig. 5, and through the medium of the bell-crank lever 14 the bar 8 is moved transversely within the slots 9 of the rail-sections 1 and 2, carrying with it the switch-tongues, this operation closing the switch-tongue 5 and opening the switch-tongue 6 to permit a car to pass upon the siding. This movement of the bar 8 has placed the notch 26 in vertical alinement with the pin 24, and as this pin is spring-actuated the pin will immediately engage within said notch and hold the bar 8 in the position to which it has been moved, consequently retaining the switch-tongues in this position and preventing them from being moved until the rolling-stock has passed upon the siding. The distance at which the actuating-pin 30 is located from the switch-tongues is supposed to be suffi-

cient to permit a train to pass upon the siding before said pin will be actuated by the wheels passing over the same. The pin 30 has been elevated by the movement of the pin 24, and as the wheels of the rolling-stock strike the pin 30 and depress the same the pin 24 is returned to its normal position through the medium of the bell-crank lever 28, link 27, and angular arm 21, the same being true of the actuating-pin 30'. It will of course be understood that in case an engine or a short train of cars passes onto the siding it is necessary to operate the pin 30 to return the switch-tongues 5 and 6 to their original position to prevent any cars coming in the opposite direction upon the main tracks from being derailed by the closed or lowered position of the switch-tongues 5 and 6. When a train is coming off of the siding onto the main track, the pin 30' is actuated, similar to the pin 30 heretofore described, to return the switch-tongues 5 and 6 to their original position.

While I have herein illustrated the preferred manner of constructing my improved switch, it is obvious that various changes may be made in the details of construction without departing from the general spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a switch-throwing device, the combination with the rails of a main track and a siding-track, of pivoted switch-tongues, a bar connecting said tongues together, means mounted upon the main track to throw said switch-tongues, means carried by a rail of the main track to lock said switch-tongues in their thrown position, and means mounted respectively upon one rail of the siding-track and one rail of the main track to unlock said switch-tongues and return said tongues to their normal position, substantially as described.

2. In a switch-throwing device, the combination with the rails of a main track and a siding-track, of pivoted switch-tongues connected together, means mounted upon the main track to throw said switch-tongues, means to lock said switch-tongues in their thrown position, vertically-movable pins mounted upon the main track and siding-track and projecting through holes in the heads of the rails of said main and siding track, and mechanism connected to said pins to unlock said switch-tongues and means carried by the rolling-stock to actuate the above-named means, substantially as described.

3. In a switch-throwing device, the combination with the rails of a main track and a siding-track, of pivoted switch-tongues, a bar connected to said switch-tongues and having a notch, levers mounted upon the side of said main track and adapted to throw

said switch-tongues, a spring-actuated pin adapted to engage the notch in said bar and lock said tongues in their thrown position, levers mounted upon the sides of said siding-track and main track to unlock said pin, vertically-movable pins carried by said last-named levers and adapted to be depressed by the wheels of the rolling-stock means to return said switch-tongues to their normal

position, and means carried by the rolling-stock to actuate said first-named levers substantially as described. 10

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

MICHAEL F. BURKHART.

Witnesses:

J. M. SMITH,

J. C. STOUGH.