

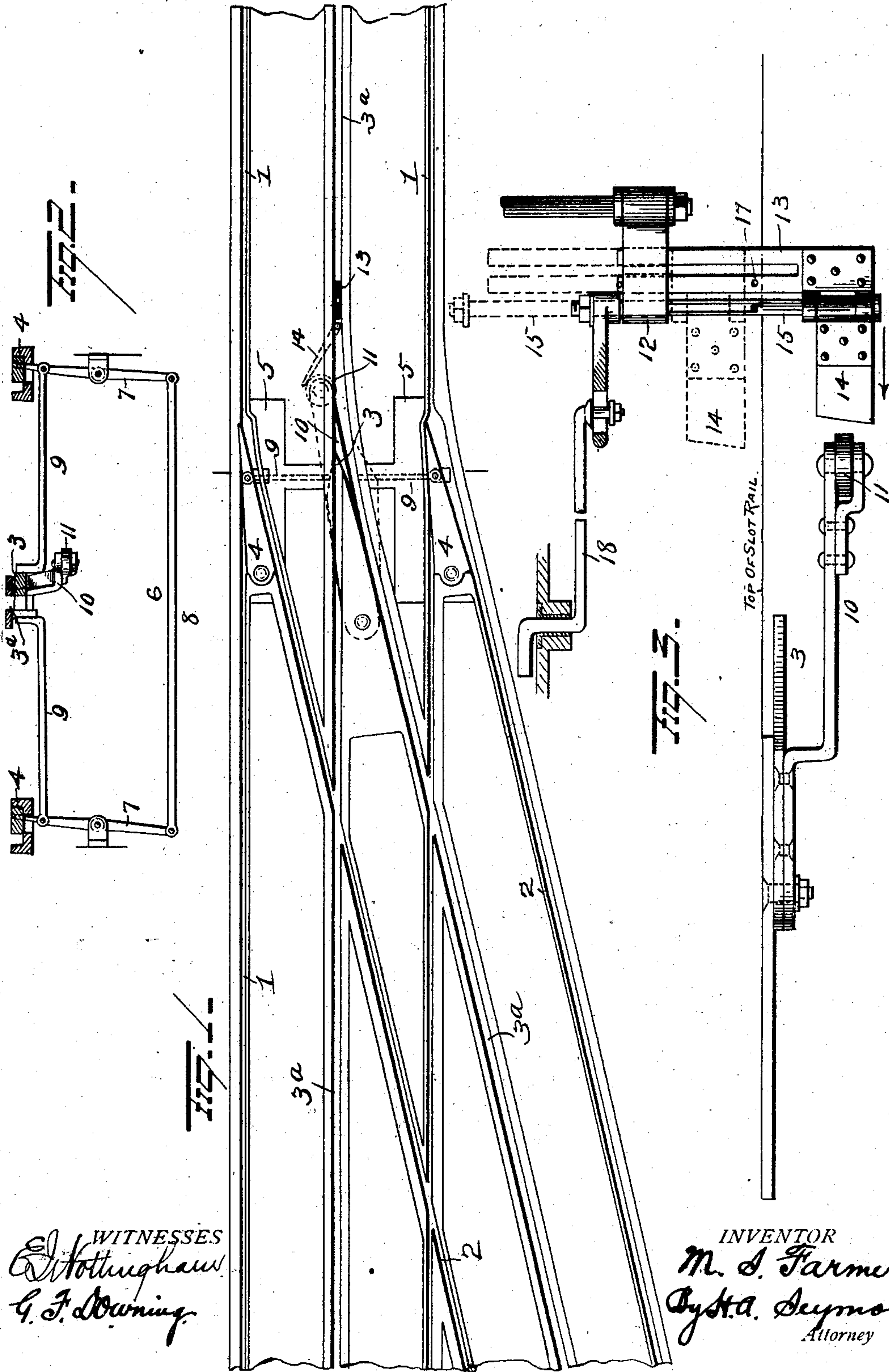
No. 693,384.

Patented Feb. 18, 1902.

M. S. FARMER.
RAILROAD SWITCH.

(Application filed Nov. 25, 1901.)

(No Model.)



WITNESSES
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MATTHEW SINGLETON FARMER, OF WASHINGTON, DISTRICT OF COLUMBIA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 693,384, dated February 18, 1902.

Application filed November 25, 1901. Serial No. 83,584. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW SINGLETON FARMER, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Railroad-Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in railroad-switches and means for operating the same, and more particularly to a switch for underground-motive railroads, the object of the invention being to provide an improved switch which can be readily operated by mechanism connected with a car passing over the switch in either direction.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view illustrating my improvements. Fig. 2 is a view in transverse section on the line *yy* of Fig. 1. Fig. 3 is a detail view showing the switch-operating mechanism on the car in the act of operating the switch.

1 represents the main track of an ordinary underground-motive railroad, and 2 a side track or turnout therefor, both of said tracks being provided with the usual slot 3^a for the passage of the plow. The ends of the rails of the side track 2 are provided with pivoted switch-points 4, and the center of said track 2, where its slot merges into the slot of the main track, is provided with a pivoted plow-guiding tongue 3. The two switch-points 4 are pivotally connected at their larger ends in their respective positions in line with one main rail and one switch-rail and, as shown in the drawings, preferably rest on the metal bed-plate 5, on which they slide. These two switch-points are coupled up by the yoke 6, comprising two vertical arms 7 7 and the connecting-bar 8, the said arms and bar being located below and outside of the conduit proper, so as not to interfere with the plow or with the switch-actuating mechanism carried by the car. The vertical arms 7 7 of the yoke are pivoted on a suitable support at points be-

low the rails and are connected at their upper ends to the switch-points 4, so that when one arm is pushed or moved laterally the other arm follows the same movement. Hence when the switch-points 4 are moved to carry one point against its fixed rail the other will be moved away from its fixed rail. Located transversely of the track are the horizontal rods 9 9. These rods are connected at their outer ends to the vertical arms 7 7 of the yoke 6 and are of such length that one of them will be engaged by the movable tongue 3 when the latter is moved laterally. Hence it will be seen that as the movable guiding-tongue is moved by the mechanism hereinafter to be described it engages one of the rods 9 and slides it in the direction of the movement of the tongue, thus simultaneously moving both switch-points 4. When the tongue 3 is moved in the opposite direction, it engages the other rod 9, thus moving the switch-points 4 in a reverse direction.

With the construction thus far described it is evident that if the slot and tracks be opened for the siding and the next car along wants the main track by shifting the tongue 3 in the proper direction the slot to the main track will be opened and the switch closed to the siding, thus permitting the car to continue along the main track. If the main track be opened and it becomes necessary to pass the car on the siding or turnout, the swinging of the tongue 3 laterally, as before explained, to open or clear the slot to the siding, also by its contact with one of the sliding rods 9, operates to move the switch-rails to a position for the car to enter the siding.

Secured to the under side of the plow-guiding tongue 3 is the actuating-arm 10. This arm is rigidly secured to the under side of the guiding-tongue 3 at a point in rear of the free end of the latter and is then bent downwardly and forwardly to a point in advance of the free end of the tongue 3 and is provided at its free end with an antifriction-roller 11, which latter is designed to be engaged by the hinged trip-arm, to be hereinafter described.

Secured to the car or car-truck is the support 12, which latter carries the vertically-sliding frame 13. Hinged to the front edge of this vertically-sliding frame is the trip-arm 14, having an upwardly-projecting shaft 15.

The hinged trip-arm is located in advance of the front wheels of the truck and is rigidly secured to said shaft 15, so that when necessary the vertically-sliding frame 13, with its trip-arm and shaft, may be elevated so as to bring the trip-arm in a plane above the car-tracks, thus permitting the use of the device on cars employing both the underground and overhead electric systems. This device is of course only applicable in connection with an underground system, (either electric or cable;) but in many localities the underground electric system is employed part of the way and the overhead system for the balance of the way. Hence it is necessary when the device is used on a system part underground and part overhead to provide for the disposal of the trip-arm when the end of the conduit system has been reached. With my device when the change is made from underground to overhead the trip-arm can simply be moved upwardly out of the conduit and supported in an elevated position above the road-bed by a pin passed through the hole 17 in the sliding frame above the support. The trip-arm is actuated by suitable levers extending from shaft 15 to the motorman's platform, and these levers may be controlled by a foot-lever or hand-crank. This lever or crank-arm 18 projects upwardly through the platform in a position to be operated either by the foot or the hand of the motorman, suitable provision being made, if necessary, in the way of pawl-and-ratchet connection for locking the crank in position. The shaft 15, above referred to, is made angular in cross-section, so as to permit it to slide freely up through the actuating-lever, which is connected thereto.

As the trip-arm 14 is located in advance of the front wheels of the car, it will be seen that in order to actuate the switch it will be simply necessary for the motorman to shift the position of the trip-arm so that it will engage the antifriction-roller at the front end of the actuating-arm 10 and move the latter sidewise. This lateral movement of the actuating-arm moves the tongue 3 laterally, and the latter in turn shifts the switch-rails, as before explained. When the rails have been once shifted, they remain so until again actuated positively by the trip-arm of another car. It is of course essential and necessary that the relative positions of the trip-arm and free end of the actuating-arm be so regulated that the latter be moved its full throw, so as to completely shift the switch arms or points before the front wheels engage the latter, and it is evident that various modifications may be devised for accomplishing this result. It is also evident that other changes in the construction and relative arrangement of the several parts might be made without avoiding my invention, and hence I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described; but,

Having fully described my invention, what

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

1. In a switch for conduit-railways, the combination with two switch-points, a yoke connecting same whereby they move in unison and a rod projecting inwardly toward the conduit-slot from each switch-point, of a guiding-tongue located at the juncture of the main and turnout slots and adapted to engage the inwardly-projecting rods whereby the switch-points are moved by the movement of the guiding-tongue.

2. In a switch for conduit-railways, the combination with the main rails, turnout-rails and switch-points, of a depending yoke connecting the two switch-points, a guiding-tongue located at the juncture of the main and turnout slots, rods located on opposite sides of the guiding-tongue and adapted to be moved by the latter to shift the switch-points and an actuating-arm connected to said tongue and adapted to be shifted by contact with a device carried by the car.

3. The combination with two switch-points connected to move in unison, of a guiding-tongue located between said switch-points and sliding rods located on opposite sides of the tongue and adapted to be engaged thereby for shifting the point-rails.

4. In a switch for conduit-railways, the combination with switch-points connected to move in unison and a guiding-tongue for closing either the main or turnout slot, of a sliding rod interposed between each switch-point and the guiding-tongue, whereby lateral movements of the latter are transmitted to the switch-points.

5. The combination with switch-points, a sectional yoke connecting the points whereby they are caused to move in unison and an inwardly-projecting rod for each switch-point, of a guiding-tongue located intermediate the ends of said rods and an actuating-arm located below said tongue and connected thereto and adapted to be engaged by a device projecting from the car.

6. In a switch for conduit-railways, the combination with switch-points, a guiding-tongue and means whereby the points are simultaneously operated by the lateral movements of the tongue, of a support carried by the car and a vertically-movable trip-arm carried by said support.

7. In a switch for conduit-railways, the combination with switch-points, a guiding-tongue and means whereby the points are simultaneously shifted by the lateral movements of the guiding-tongue, of an actuating-arm secured to the guiding-tongue, a vertically-movable trip-arm carried by the car and adapted to engage the actuating-arm and means for shifting the position of the trip-arm.

8. In a conduit-railway the combination with a movable switch-point, a pivoted plow-guiding tongue located at the juncture of the main and turnout slots and means for con-

necting the tongue and switch - point, of a shifting-arm carried by the car and adapted to be adjusted to engage the edge of the plow-guiding tongue and positively shift the switch-point, substantially as set forth.

5 9. In a conduit-railway the combination with two movable switch-points, a pivoted plow-guiding tongue located at the juncture of the main and turnout slots and means for
10 connecting the tongue with both switch-points, of a shifting-arm carried by the car

and adapted to be adjusted to engage either edge of the plow-guiding tongue and positively and simultaneously shift both switch-points, substantially as set forth.

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

MATTHEW SINGLETON FARMER.

Witnesses:

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