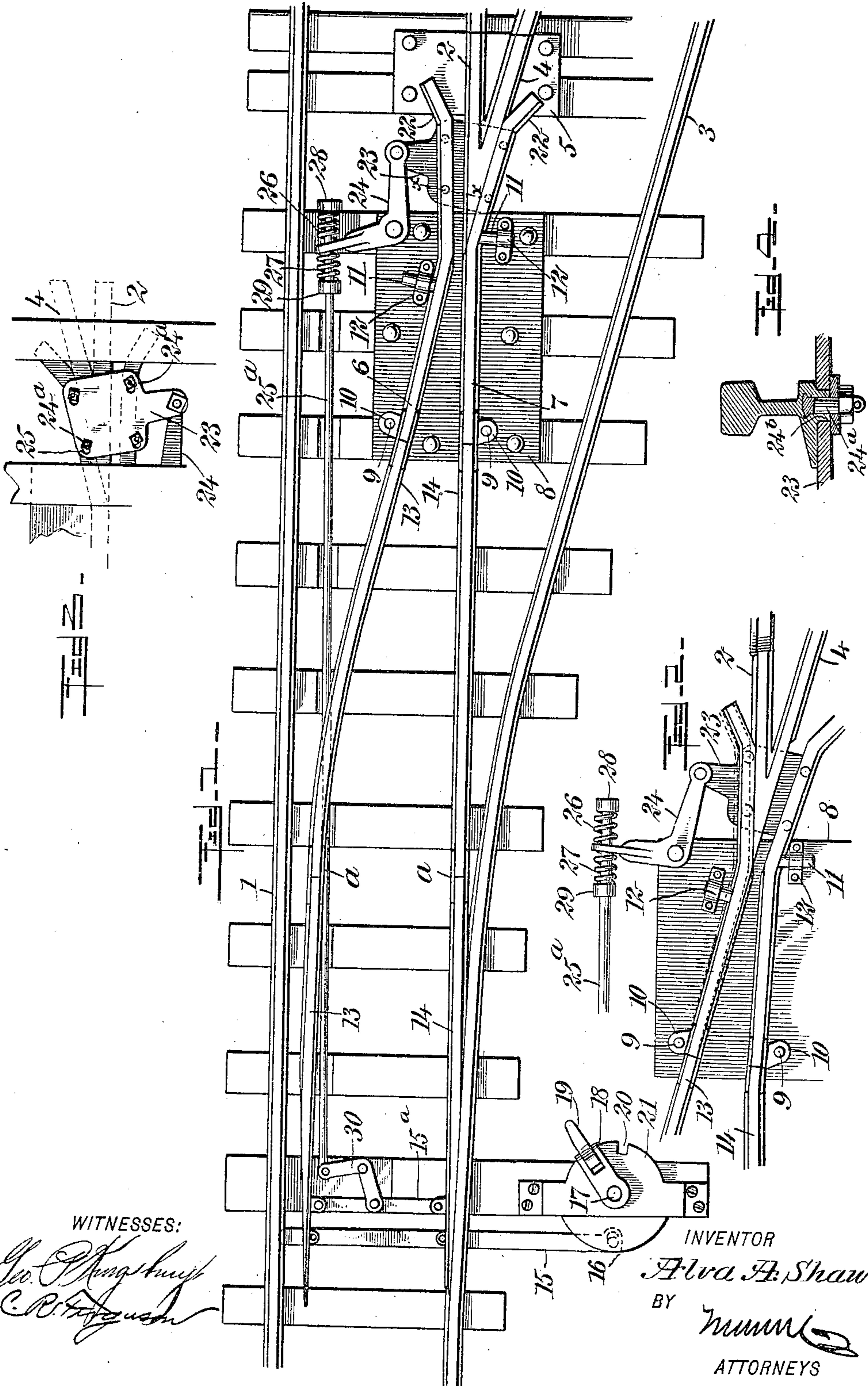


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PATENTED MAR. 27, 1906.

A. A. SHAW.
RAILWAY SWITCH.

APPLICATION FILED NOV. 14, 1906.



WITNESSES:

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ALVA AUGUSTUS SHAW, OF ARKADELPHIA, ARKANSAS.

RAILWAY-SWITCH.

No. 816,257.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed November 14, 1905. Serial No. 287,271.

To all whom it may concern:

Be it known that I, ALVA AUGUSTUS SHAW, a citizen of the United States, and a resident of Arkadelphia, in the county of Clark and State of Arkansas, have invented a new and Improved Railway-Switch, of which the following is a full, clear, and exact description.

This invention relates to improvements in railway-switch mechanism, the object being to provide a simple, compact, substantial, and efficient switch-frog with a view of obtaining a convex track-rail both for the main line and switch or siding and that will be adapted to all kinds of switching whether the switch is operated from a switch-station or from a tower.

Other objects of the invention will appear in the general description.

I will describe a railroad-switch embodying my invention, and then point out the novel features 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 figures.

Figure 1 is a plan showing a switch mechanism embodying my invention. Fig. 2 is a fragmentary plan showing the parts in a different position than that in Fig. 1. Fig. 3 is an inverted fragmentary plan hereinafter more particularly described, and Fig. 4 is a section on the line *x x* of Fig. 1.

Referring to the drawings, 1 and 2 indicate main-track rails, and 3 and 4 indicate switch or siding rails. The rail members 2 and 4 are convergent or V-shaped and are rigidly secured to a plate 5. At opposite sides of the rail members 2 and 4 are frog-rail sections 6 and 7, which are pivotally connected to a metal plate 8, secured to rail-ties. As here shown, the pivots 9 pass through the lugs 10 on the ends of the rail-sections 6 and 7. These rail-sections 6 and 7 are held from upward movement and guided in their lateral swinging movements by means of studs 11, projected from the sides of the rail-sections and slidable through clips 12, attached to said plate 8. Continuations of the frog-sections 6 and 7, which are rails of convenient length, are connected to the switch-tongues 13 and 14 with fish-plates *a* in the ordinary manner. To the free ends of the switch-tongues is connected a special actuating-bar 15, which is connected within a few inches of the ordinary

switch-bar. The switch-tongues 13 and 14 may be operated either by an ordinary switch-stand, in which case the frog mechanism is locked simultaneously with the switch in either direction, or the switch-tongues 13 and 14 may be operated from an electric switching-tower, as used in the modern switch-yard, in which case the frog mechanism is locked simultaneously with the switch-tongues 13 and 14. As no matter what kind of a device is used to operate the switch, the frog mechanism, being attached directly to the switch-tongues, must operate and lock at the same time and by the same means as the switch-tongues. I have here shown, however, the switch-tongues as pivotally connected to an actuating-bar 15, which has pivotal connection with a crank-plate 16, mounted on a rod 17, which is provided at its upper end with a lever 18, carrying a swinging latch member 19, adapted to engage in either one of two notches 20, one of which is shown in Fig. 1, formed in a segment-plate 21, arranged over the crank-plate 16, and thus the switch-tongues and the frog members 6 and 7 may be locked as adjusted. The rear ends of the frog members 6 and 7 are turned outward from the portions 2 and 4, as indicated at 22, so that the wheel-flange may pass between said portions and the track members 2 and 4, and these ends of the track members 6 and 7 are pivotally connected to a plate 23, as here shown, by means of studs or bolts 24^a, which pass through slots 25 in said plate and connect with the frog members 6 and 7. The studs or bolts pass through bosses 24^b on the rails, the said bosses being engaged in the slots 25. The plate 23 is pivotally connected to one member of an angle-lever 24, the other member of the angle-lever being provided with a perforation through which a draw-rod 25^a passes, and engaging around the draw-rod at opposite sides of the angle-lever are springs 26 and 27, which abut against a collar 29 and a nut 28 on the rod, the said nut providing for the adjustment of the springs. These springs form cushions which will prevent accident to a train should the train or wheels thereof pass the frog, as the flanges of the wheels by engaging with the frog-rail members will force the same laterally against the resistance of the springs. The forward end of the rod 25^a is pivotally connected with one member of an angle-lever 30, mounted on a cross-tie, the

other member of said angle-lever 30 having pivotal connection with a bar 15^a, connected with the switch-tongues 13 and 14.

In operation by means of the bar 15 or any other desired means the switch-tongues and the frog-rail members 6 and 7 will be simultaneously moved in one direction or the other, depending on the direction of movement of said bar 15, and obviously by this arrangement the frog-rail members practically form, with the switch-tongues, continuous rails.

One advantage of frog and switch-tongue movement embodying my invention over other tongue-rail frogs resides in the fact that the frog is always open to either track being used, where in other frogs the rail is held by a spring, it being necessary for the wheels to push the rail open to secure a passage to the switch, and, further, there is no possibility of the car-wheels coming in such contact with the end of the members 2 and 4 to cause a breaking or wearing away of the same. Another advantage my invention has over other inventions of similar character resides in the fact that my invention is adaptable to switches operated from switching-towers, where previous inventions are only adapted to the ordinary switch-stand. Another advantage resides in the simplicity of construction, which renders my invention perfectly safe and reliable under all conditions and also cheapens the manufacture and installation and reduces the liability of repairs to a minimum. It is understood, however, that all the mechanism may be covered or incased in suitable coverings or casings to prevent gravel or other foreign substances from coming in contact with the mechanism and interfering with its operation.

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

1. In a railway-switch mechanism, swinging switch-tongues, swinging frog-rail members, guides for said members, a plate pivotally connected with said frog-rail members,

an operating-rod pivoted to the free ends of the tongues, an angle-lever pivoted to said rod, an angle-lever pivoted to the plate connected to the frog-rail members, and a rod connection between the two angle-levers.

2. In a railway-switch mechanism, swinging switch-tongues, swinging frog-rail members, guides for said members, a plate pivotally connected with said frog-rail members, an operating-rod pivoted to the free ends of the tongues, an angle-lever pivoted to said rod, an angle-lever pivoted to the plate connected to the frog-rail members, a rod connection between the two angle-levers, a cushion-spring on said rod engaging the last-named angle-lever.

3. In a railway-switch mechanism, swinging switch-tongues, swinging frog-rail members having their rear ends turned outward, guides for said members, a plate pivotally connected with said frog-rail members, an operating-rod pivoted to the free ends of the tongues, an angle-lever pivoted to said rod, an angle-lever pivoted to the plate connected to the frog-rail members, a rod connection between the two angle-levers, and cushion-springs on said rod engaging with the last-named angle-lever.

4. In a railway-switch mechanism, a metal plate arranged between the track-rails, swinging switch-tongues, frog-rail members having swinging connection with said plate, lateral guides for said frog-rail members, a plate underneath the frog-rail sections, and having slots, studs extended from said rail-sections into said slots, bosses on said rail-sections and surrounding the studs, and means for swinging the tongues and rail-sections.

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

ALVA AUGUSTUS SHAW.

Witnesses:

P. J. CALHOUN,
JOE L. DEMS.