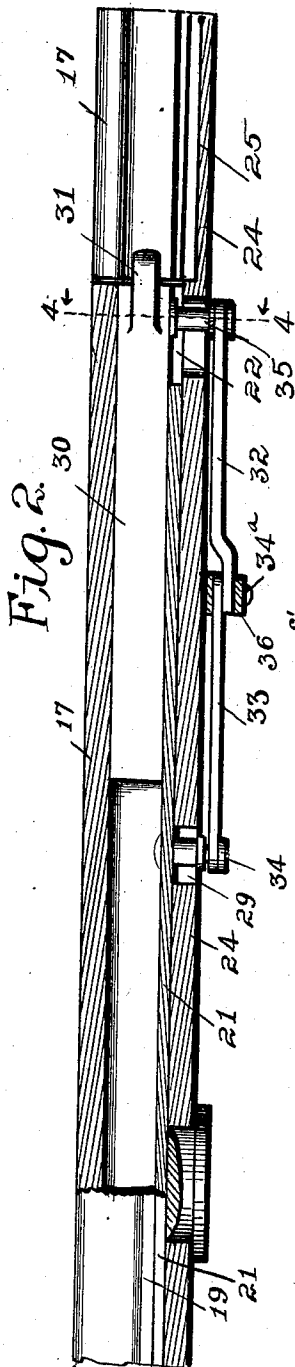


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RAILROAD SWITCH AND FROG.  
APPLICATION FILED JAN. 12, 1911.

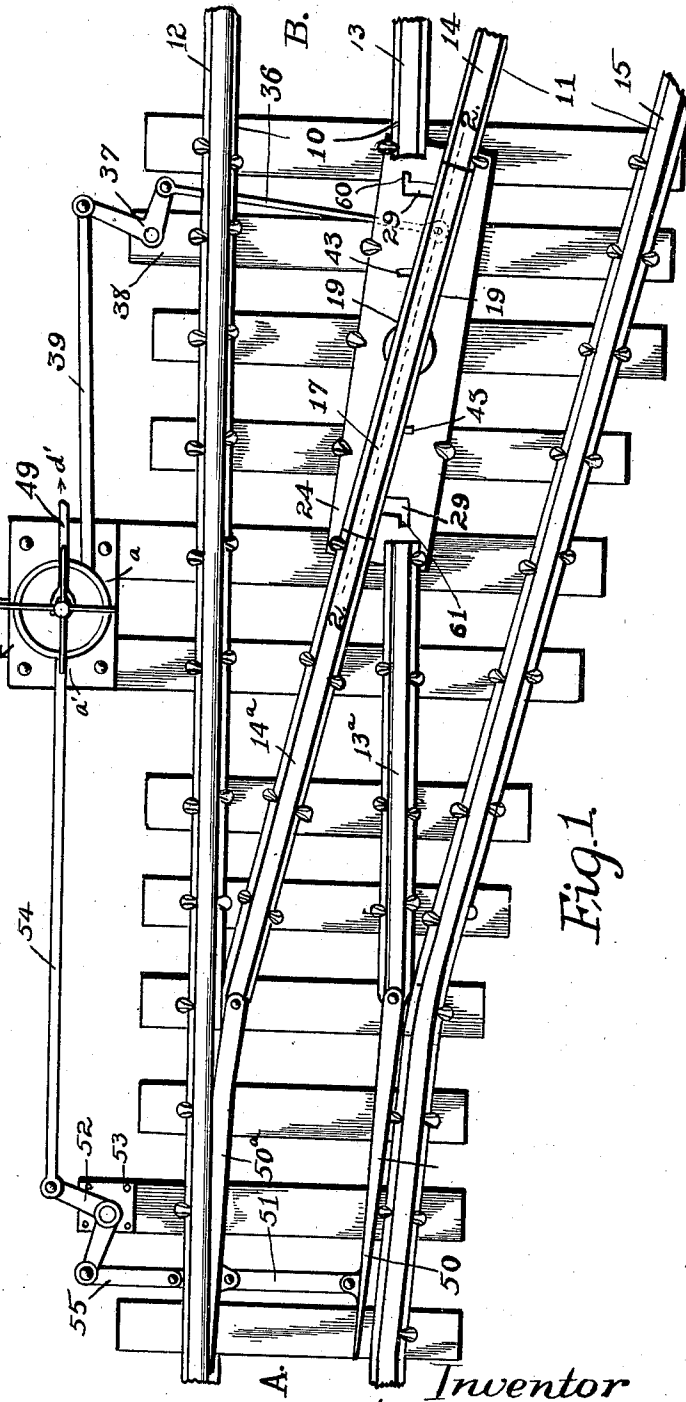
1,001,776.

Patented Aug. 29, 1911.

2 SHEETS—SHEET 1.



Witnesses  
A. S. Hague  
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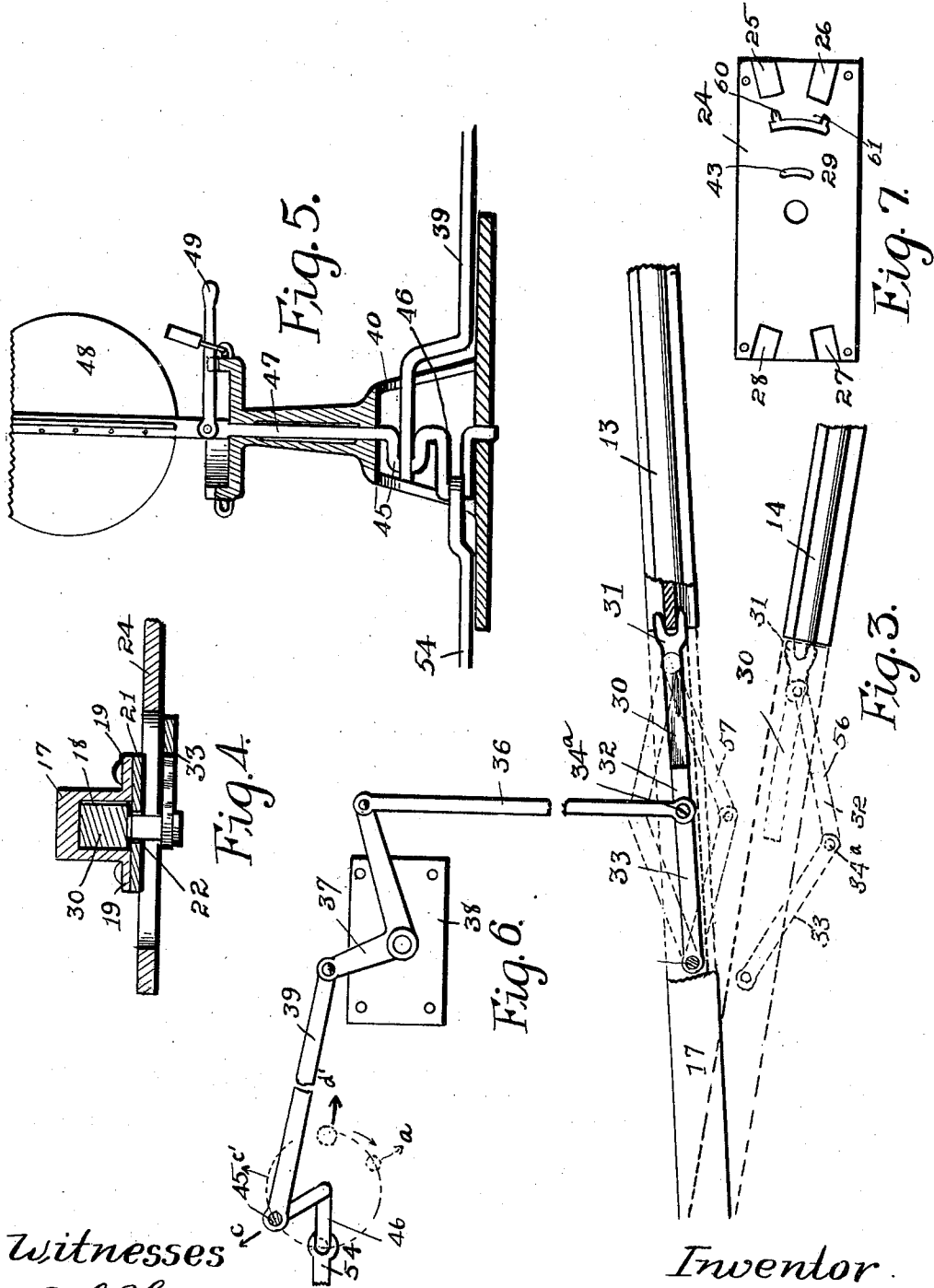


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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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RAILROAD SWITCH AND FROG.

1,001,776.

Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed January 12, 1911. Serial No. 602,164.

To all whom it may concern:

Be it known that I, AUGUSTIN SCOHY, a citizen of the United States, residing at Bussey, in the county of Marion and State of Iowa, have invented a certain new and useful Railroad Switch and Frog, of which the following is a specification.

The object of my invention is to provide an improved railroad switch and frog for railroad switches and junctions having an adjustable rail member at the place where the inner rail of the switch crosses the inner rail of the main track, of such construction that it engages the adjacent end of the rail of the track upon which the train is to travel.

A further object is to provide a device of simple construction for locking the said adjustable rail member in said engaged position in exact alinement with the rails of the track on which it is desired to have the train run.

A further object is to provide mechanism which at one and the same time adjusts said rail member to proper position, locks such member in said position and adjusts the ends of the inner rails at the point where the switch begins, in proper position for the passage of a train or car, and in which the mechanism is easily and readily controlled from one point by the operator.

A further object is to provide mechanism of simple and durable construction by which said adjustable member and the ends of the inner rails at the point where the switch begins, may be adjusted to position to run a car or the like upon the desired track, and locked in said position.

My invention consists in certain details in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which:

Figure 1 shows a top or plan view of a railroad switch and frog embodying my invention. Fig. 2 shows a vertical central sectional view of the adjustable rail member and its accompanying mechanism, on the line 2—2 of Fig. 1. Fig. 3 shows a detail plan view of the mechanism for operating my device. Fig. 4 shows a detail vertical sectional view on the line 4—4 of Fig. 2. Fig. 5 shows a vertical central sectional view of the switch stand and its accompanying mechanism. Fig. 6 shows a plan view of

part of the operating mechanism. Fig. 7 shows a plan view of the broad plate under the adjustable rail member.

In the accompanying drawings I have used the numeral 10 to indicate an ordinary railroad track. 11 indicates a similar track which forms a junction with the track 10. My improved frog and switch may be used at any point of junction of two railroad tracks and for convenience in this description I shall designate track 10 as the main track, and track 11 as the switch track, and shall call the rails which cross each other the inner rails of said tracks.

12 indicates the outer rail of the main track, 13 indicates the inner rail of said track, 14 indicates the inner rail of the switch track, and 15 indicates the outer rail of the switch track. At the place where the rail 15 crosses the rail 14 at the junction of the tracks 13 and 14, portions of said rails 14 and 15 equal in length are removed, the central point of the openings thus left being the same.

17 indicates an adjustable rail member of sufficient length to extend across the opening in the rail 14 or the opening in the rail 15, said rail member 17 being designed to be adjusted to form part of track 10 or of track 11 as may be desired. The rail member 17 comprises an inverted U shaped bar, its upper surface being approximately of the same width as the upper surfaces of the rails of tracks 10 and 11, and a metal plate 21. Said U shaped bar is constructed with a longitudinal slot 18 in its lower side designed to receive the engaging member 30 hereinafter mentioned, said slot being widened at the end of said rail member, being designed at that point to receive the shoulders of the Y shaped locking device 31 at the end of said engaging member 30. On the lower surfaces of said U shaped bar are formed laterally extending flanges 19. Below said U shaped bar is a plate 21 secured to said flanges 19, said plate being constructed with a longitudinally extending slot 22 near its end, said plate extending from one end to the other of said U shaped bar. The rail member 17 is pivotally mounted at its central point upon a plate 24. The ends of the rail member 17 are designed to move laterally on said plate 24, which is secured to the ties of the railroad track and is broad enough to permit said rail member 17 to rest upon it when forming a part of the rail 13 or when forming part of the rail

14. At the ends of said plate 24 are notches 25, 26, 27 and 28 designed to receive the ends of the rails 13 and 14. Near the ends of the plate 24 is a transverse slot 29 which has lateral extensions 60 and 61 in line with the rails 13 and 14 which lateral extensions are on the side of the slot 29 nearest said rails, the purpose of said slots 29 and the extensions thereof being hereafter set forth.

15 Said plate 24 is also constructed with a transverse slot 43 spaced apart from its central point on the side in which is formed the slot 29. Slidingly received in the slot 18 is an engaging member 30, slightly smaller in cross section than said slot 18.

20 At the end of said engaging member 30 nearest the end of the rail member 17 is pivotally mounted a Y shaped locking device 31 which is designed to detachably engage that portion of the nearest rail between its base and its tread portion.

Underneath the plate 24 is a bar comprising the members 32 and 33 pivoted together by the pin 34<sup>a</sup>. One end of the bar member 33 is pivotally mounted on the plate 21 by means of the pin 34, which extends upwardly through the bar 33, the slot 43 and the plate 21. The bar member 32 is pivotally secured to the engaging member 30 near the locking device 31, by means of the pin 35 which extends through the transverse slot 43 in the plate 24, and the slot 22 in the plate 21, said slots being constructed of such sizes and shapes as to permit the free movement of said pin 35 in the operation of the switch and frog as hereinafter described. As shown in Fig. 2 the members 33 and 32 form a straight line below the plate 24 when in normal position. A laterally extending arm 36 is pivotally attached to the arms 32 and 33 by means of said pin 34<sup>a</sup>. Said arm 36 extends across the track to a point outside the outside rail. A bell crank lever 37 is pivotally mounted on a suitable tie or block 38. One end of said bell crank lever is pivotally attached to said arm 36 and the other end is pivotally attached to an arm 39. 40 indicates a switch stand base of ordinary construction. A vertical shaft 47 is pivotally mounted in the base 40, said shaft having cranks 45 and 46 formed near its lower end. The arm 39 is pivotally attached at one end to one arm of the bell crank lever 37, and extends therefrom approximately parallel to the track 10 to the switch stand base 40, and is pivotally mounted at its other end upon the crank 45. At the upper end of the shaft 47 is an ordinary indicator signal 48. Pivotally mounted upon said shaft 47 is a handle 49 for turning the shaft 47. The handle 49 is designed to be turned in a circle around the shaft 47 and the shaft stand 40 is provided with suitable means for locking said handle at points in said circle equidistant from each other, such locking

points being so located that the handle 49 may be locked when the rail member 17 forms a part of the rail 13 or of the rail 14, as may be desired.

Portions 50 and 50<sup>a</sup> of the ends of the rails 13 and 14 at the point where the switch begins are laterally slidable at their ends farthest removed from the rail member 17, and are pivotally secured at their other ends adjacent to the portions 14<sup>a</sup> and 13<sup>a</sup> of the rails 14 and 13. The portions 13<sup>a</sup> and 14<sup>a</sup> of the rails 13 and 14 between the portions 50 and 50<sup>a</sup> and the adjustable rail member 17, are secured to the ties of the track. The portions 50 and 50<sup>a</sup> may be pivoted upon the portions 13<sup>a</sup> and 14<sup>a</sup> or upon a tie or upon a suitable plate and are laterally slidable upon the ties except at their pivoted ends. Said portions 50 and 50<sup>a</sup> are tapered from their pivoted ends to their other ends. A bar 51 extends across the track beneath the rails near the narrow ends of the portions 50 and 50<sup>a</sup> and is rigidly secured to the lower surfaces to said portions 50 and 50<sup>a</sup>. Said bar 51 is constructed with an extension 55, pivotally secured at one end to said bar 51 and at the other end to an arm of a bell crank lever 52. A bell crank lever 52 is pivotally mounted upon a suitable tie or base 53. The extension 55 is pivotally mounted upon one arm of the bell crank lever 52. An arm 54 is pivotally mounted upon the other arm of said bell crank lever 52 and extends along the track approximately parallel thereto to the stand 40 where it is pivotally mounted upon the crank 46.

In the drawings Fig. 5 shows the mechanism of the switch stand viewed from the side away from the track, when the rail member 17 and the rail portions 50 are in the position shown in Fig. 1. The positions of the bell crank levers 52 and 37 and the construction of the cranks 45 and 46 may be changed if desired, only one operative construction and arrangement being shown.

In the practical operation of my improved switch and frog the handle 49 is always moved from right to left. When the movable portions of the track are in position shown in Fig. 1, the cranks 45 and 46 extend in the direction indicated by the arrow at *a*. When the movable portions 50 and 50<sup>a</sup> and the rail member 17 are in position to run a car from the point A, and it is desired to throw the switch to run a car upon the track 11, the handle 49 is disengaged from its locked position and turned to the left. When an eighth turn of the handle is made the cranks 45 and 46 are moved from the position indicated by the arrow at *c* to the position indicated by the arrow at *c'*, the bars 32 and 33 are moved to the position shown by the dotted lines 57 shown in Fig. 3, the locking device 31 is dis-

engaged from the rail 13 and the movable portions 50 and 50<sup>a</sup> are drawn one fourth the distance of their possible lateral movement. When the handle 49 is moved a quarter turn farther, the cranks 45 and 46 are moved from the position indicated by the arrow at *c'* to the position indicated by the arrow at *d'*, the rail member 17 is moved to position in line with rail 14, the bars 32 and 33 being then in the position indicated by the dotted lines 56 in Fig. 3. The movable portions 50 and 50<sup>a</sup> have then moved three fourths of the distance of their possible lateral movement. When the handle 49 is given another eighth turn, the cranks 45 and 46 are moved from the position indicated by the arrow at *d'* to the position indicated by the arrow at *a*. The arms 32 and 33 are drawn to position in a straight line under the rail member 17, the locking device 31 is pushed forward and engages the rail 14 and the movable portions 50 and 50<sup>a</sup> are moved to the proper position for running a car upon the track 11. The handle 49 may then be locked leaving the switch and frog locked in the position desired. The switch is thus thrown by a half turn of the handle 49.

The proper proportions and positioning of the cranks 45 and 46 and the bell crank levers 37 and 52 may be ascertained from the foregoing description. The description given covers an engaging device at one end only of the rail member 17. By proper construction and arrangement easily made by one skilled in the art, such an engaging member may be placed at each end of said rail member 17.

Among the advantages secured by my improved device are the substitution for the ordinary frog of an adjustable rail member which forms a straight rail saving the wear and shock incident to the use of a frog in which are open spaces over which the car wheels must pass; my device also locks the adjustable rail member in its proper position and avoids the danger of derailment existing in ordinary frogs as the result of the fact that such frogs do not provide a continuous rail. Another advantage is found in my mechanism for adjusting the movable rail member 17 and the movable rail ends 50 and 50<sup>a</sup> by the same operation of the controlling switch handle.

Having thus described my invention what I claim is:

1. In a device of the class described, a base plate, an adjustable rail member pivoted thereon at its central point and designed to form a part of the inner rail of the switch track or of the main track as may be desired, said adjustable rail member being constructed with a longitudinal recess at

one end, a bar suitably mounted in such recess, a locking device pivotally secured to the outer end of said bar and designed to engage the end of the rail adjacent to said adjustable rail member, means for adjusting said rail member, and locking it in its adjusted position.

2. In a device of the class described, a base plate, constructed with a transverse slot near one end and with a transverse orifice between said slot and the central point of said base plate, an adjustable rail member pivoted thereon at its central point and designed to form a part of the inner rail of the main track or of the switch track as may be desired, said adjustable rail member comprising an inverted U shaped bar and a plate secured to said inverted U shaped bar on its lower surfaces, said plate being constructed with a longitudinal slot near one end, a bar slidingly mounted in said inverted U shaped bar, a Y shaped locking device pivotally secured to said last mentioned bar and designed to engage an adjacent rail, a longitudinally extending arm under the said base plate comprising two members pivotally secured together at their adjacent ends, one of the members of said arm being pivoted to said adjustable rail member by means of a pin extending through the above mentioned orifice, the other of said members being pivoted at one end to the said bar by means of a pin extending through the above mentioned transverse slot, and the above mentioned longitudinal slot, means for imparting lateral motion to said longitudinal arm, such means being applied to said last mentioned arm at the point where its members are pivoted together, means for locking the above described mechanism in position when said adjustable rail member forms a part of the main track or of the switch track.

3. In a device of the class described, a base plate, an adjustable rail member centrally pivoted thereon and designed to be adjusted to form a part of the inner rail of the main track or of the switch track as may be desired, a locking device pivotally attached to said rail member and designed to engage the end of an adjacent rail, movable portions of the inner rails of the switch track and main track pivotally secured at their ends adjacent to the inner rails of said tracks, means for adjusting said movable rail portions and said rail member and said locking device and for locking the same in their adjusted positions.

Des Moines, Iowa, December 29, 1910.  
AUGUSTIN SCOHY.

Witnesses:

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