

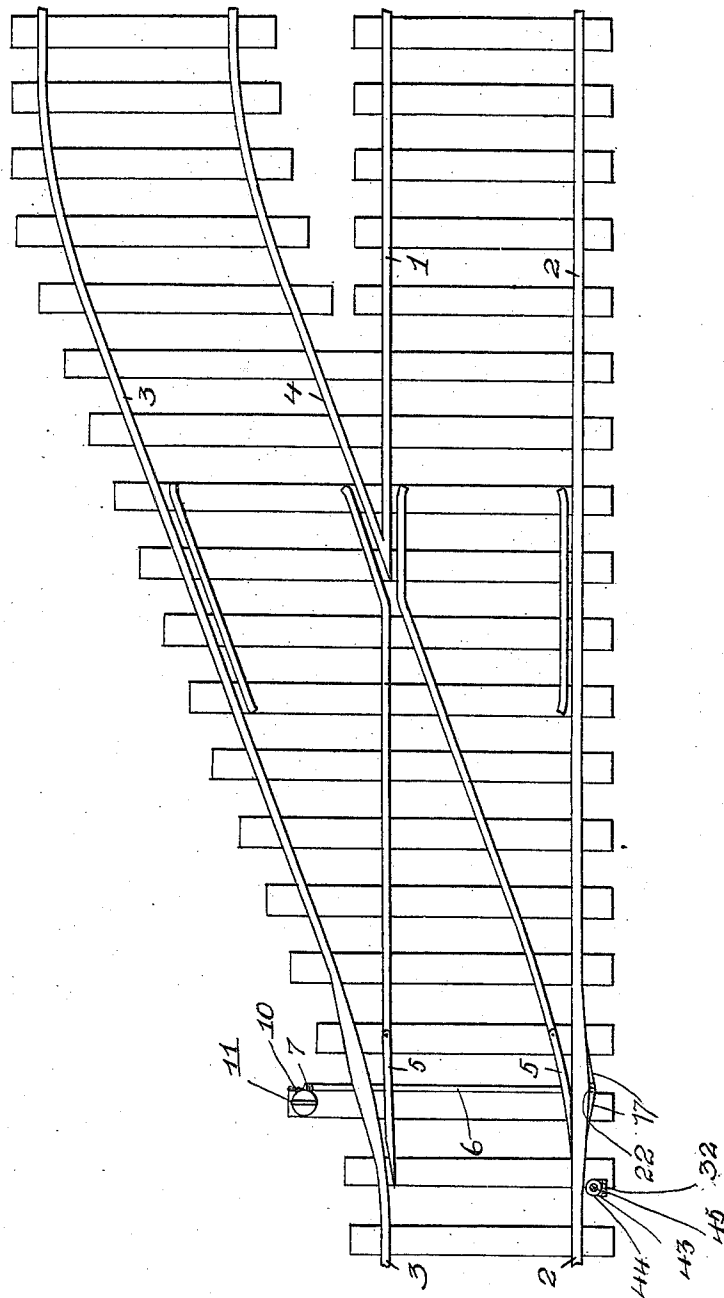
J. W. IRON.
 AUTOMATIC SWITCH THROWING DEVICE.
 APPLICATION FILED DEC. 29, 1910.

987,465.

Patented Mar. 21, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

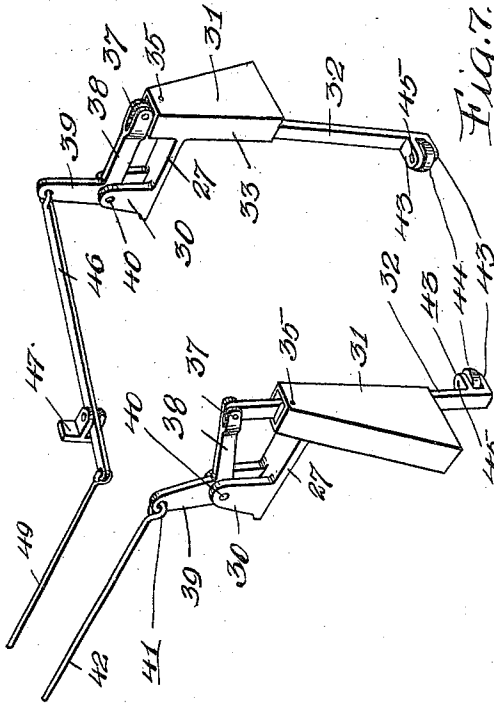


Fig. 7.

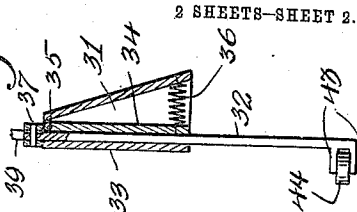


Fig. 6.

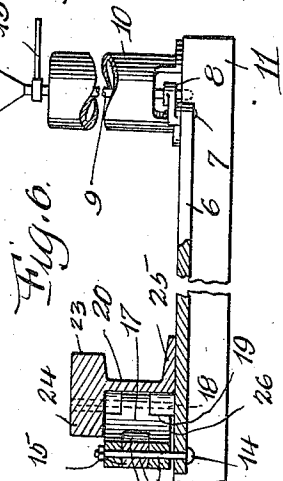


Fig. 2.

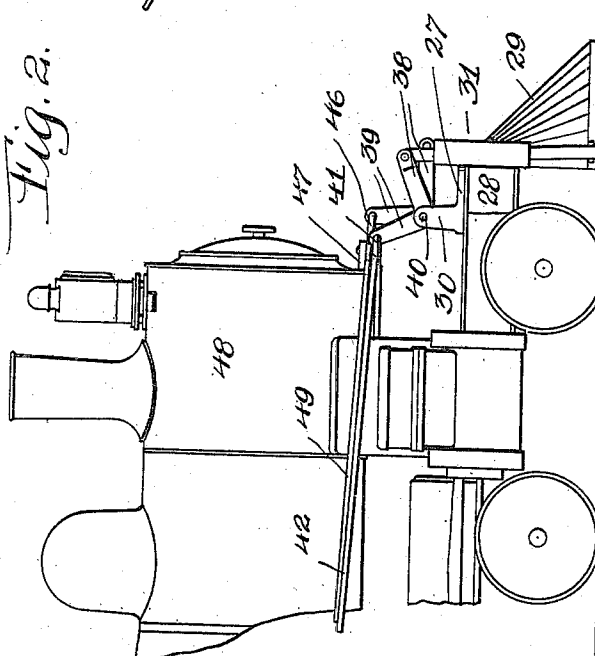
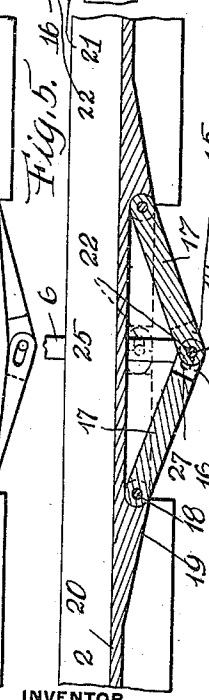


Fig. 4.



Fig. 5.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC SWITCH-THROWING DEVICE.

987,465.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed December 29, 1910. Serial No. 599,886.

To all whom it may concern:

Be it known that I, JOHN W. IRON, a subject of the King of Hungary, residing at Tioga, in the county of Huerfano and State of Colorado, have invented certain new and useful Improvements in Automatic Switch-Throwing Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an automatic switch throwing device, and the primary object of my invention is to provide a switch and locomotive with positive and reliable means in a manner as will be hereinafter set forth whereby the switch can be thrown by the engineer or fireman of a locomotive while the locomotive is in motion.

Another object of the invention is to provide a switch throwing mechanism that can be used in connection with the present type of switch for controlling the passage of a locomotive or train upon main or siding tracks.

A still further object of the invention is to accomplish the above results by a mechanism that is durable, free from injury by ordinary use, easy to install, applicable to the present types of locomotives and efficient for the purposes for which it is intended.

These and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be presently described and then claimed, and reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:—

Figure 1 is a plan of a switch in accordance with this invention, Fig. 2 is a side elevation of a portion of a locomotive equipped with the switch throwing device, Fig. 3 is a perspective view of a detached switch throwing device, Fig. 4 is an enlarged plan view of a switch rail, Fig. 5 is a horizontal sectional view of the same, Fig. 6 is a cross sectional view of a switch rail, showing a signal post partly broken away and partly in elevation, and Fig. 7 is a vertical sectional view of one of the switch throwing members.

The reference numerals 1 and 2 denote the rails of a main track and 3 and 4 the rails of a siding track, the passage of a locomotive or train from the main track to the siding track or vice versa being controlled through the medium of pivoted switch

tongues 5, said tongues being pivotally connected to a transverse bar 6 arranged beneath the tongues and the rails 2 and 3. One end of the bar 6 is pivotally connected, as at 7 to a crank 8 mounted upon a vertical signal shaft 9 rotatively mounted in a signal post 10, carried by the end of a tie 11 adjacent to the switch. The upper end of the shaft 9 is provided with a semaphore arm or signal blade 12 and with a radially disposed lever 13, whereby the switch can be manually thrown. The opposite end of the bar 6 is pivotally connected by a vertical bolt 14 and a nut 15 to the cut away and bifurcated ends 16 of toggles 17, said toggles having the opposite ends thereof pivotally connected by pins 18 to enlargements 19, carried by the outer side of the web 20 of the rail 2, adjacent to the switch tongue 5 of said rail. The bifurcated end of one of the toggles 17 is longitudinally slotted, as at 21 to receive the pivot pin 22 of the other toggle, these ends being sufficiently bifurcated and cut away whereby the toggles 17 can be swung inwardly toward the web 20 of the rail 2. The rail 3 adjacent to the other switch tongue is similarly equipped with toggles and in order to protect said toggles, the heads 23 of the rails 2 and 3 are enlarged upon the outer sides thereof, as at 24. To provide clearance for the bolts 14 and a free movement of the toggles 17, the base flanges 25 of said rails are cut away, as at 26.

Reference will now be had to the locomotive equipment, which consists of two bearings 27 suitably mounted upon the transverse beam 28 of the pilot 29 of the locomotive, each bearing having two apertured arms and a depending tapering housing 31. Extending through the housing 31 is a switch throwing member 32 normally retained in engagement with the vertical wall 33 of the housing 31 by a plate 34 having the upper end thereof pivoted in the housing 31 by a pin 35, the lower end of said plate being retained in engagement with the member 32 by a coiled compression spring 36 interposed between said plate and the inclined wall of the housing, said compression spring having the end convolutions thereof suitably fixed in the plate 34 and the inclined wall of the housing. The plate 34 is adapted to frictionally hold the member 32 within the housing, and the upper end of said member is pivotally connected by a pin 35 to the

bifurcated arm 38 of a bell crank lever 39, said bell crank lever being pivotally mounted by a pin 40 between the arms 30. The bell crank lever 39 is loosely connected to the eye-end 41 of a rod 42 that extends rearwardly in proximity to the running board of the locomotive, the rod terminating in the cab of the locomotive whereby the engineer or fireman can easily actuate the same.

10 The lower end of the member 32 is provided with two right angular apertured lugs 43, these lugs being arranged in parallelism to receive a revoluble anti-friction wheel 44 retained between said lugs by a pin 45.

15 One of the bearings 27 is located upon one side of the locomotive and the other bearing upon the opposite side, said bearing having the bell crank lever 39 thereof loosely connected to a lever 46 fulcrumed in a bearing 47, carried by the forward end of the boiler 48 of the locomotive, the short arm of the lever 46 being connected to a rod 49 similar to the rod 42, these rods being carried rearwardly whereby either one of said rods can be shifted to lower the member 32 within its housing.

In operation, when the engineer or fireman desires to throw the switch tongues 5, one of the rods 42 or 49 is pushed forwardly and through the medium of the bell crank lever 39 connected to said rod, the member 32 connected to said bell crank lever is lowered, whereby the anti-friction wheel 44 of said member will contact with one of the toggles 17 and through the medium of the bar 6 throw the switch tongues 5 in the desired direction.

The rail 3 is equipped with the toggles 17 and the locomotive with a switch throwing member upon each side, whereby the tongues can be automatically thrown irrespective of the direction in which the locomotive is traveling, or irrespective of whether the locomotive is upon the main track or the siding track.

The spring pressed plates 34 of the housing 31 are employed for holding the members 32 in their shifted position, whereby after the engineer or fireman has actuated and set said members, they will be held, thereby not requiring the engineer or fireman's attention after the switch throwing device has been set.

The switch throwing device in its entirety can be made of strong and durable metal, and while in the drawings there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements thereof are susceptible to such

changes as fall within the scope of the appended claims.

What I claim is:—

1. In a switch throwing device, the combination with switch rails, pivoted tongues, and a bar connecting said tongues, of pivoted toggles carried by said switch rails and protruding from the webs of said rails, housings carried by a locomotive adapted to travel upon said rails, switch throwing members frictionally held within said housings and adapted to contact with said toggles, and means extending rearwardly from said housings and adapted to be actuated to shift the members within said housings.

2. In a switch throwing device, the combination with switch rails, pivoted tongues, and a bar connecting said tongues, of pivoted toggles carried by said switch rails and protruding from the webs of said rails, housings carried by a locomotive adapted to travel upon said rails, switch throwing members frictionally held within said housings and adapted to contact with said toggles, means extending rearwardly from said housings and adapted to be actuated to shift the members within said housings, said means including bell crank levers, a fulcrumed lever, and rods.

3. In a switch throwing device, the combination with switch rails, pivoted switch tongues, and a bar connecting said tongues, of pivoted toggles carried by the outer sides of said switch rails and pivotally connected to said bar, a locomotive equipment comprising bearings, housings carried thereby, members frictionally held within said housings and adapted to engage said toggles, and means carried by said bearings and including bell crank levers and rods adapted to shift said members within said housings.

4. In a switch throwing device, the combination with switch tongues, and a bar connecting said tongues, of pivoted toggles adapted when actuated to shift said bar and the tongues connected thereto, a locomotive equipment comprising frictionally held members adapted to engage said toggles, anti-friction wheels carried by the lower ends of said members, and means connected to the upper ends of said members and including bell crank levers and rods adapted to shift said members.

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

JOHN W. IRON.

Witnesses:

JOE MATTAPH,
GEO. TODD.