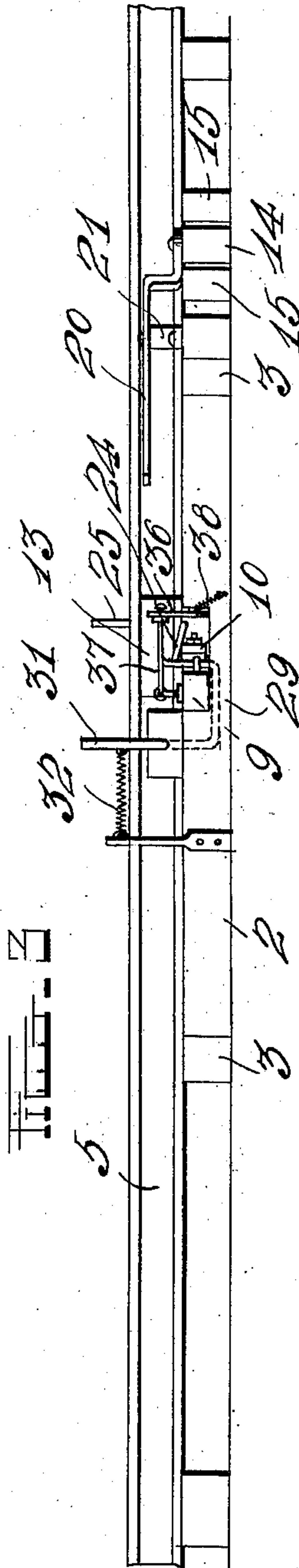
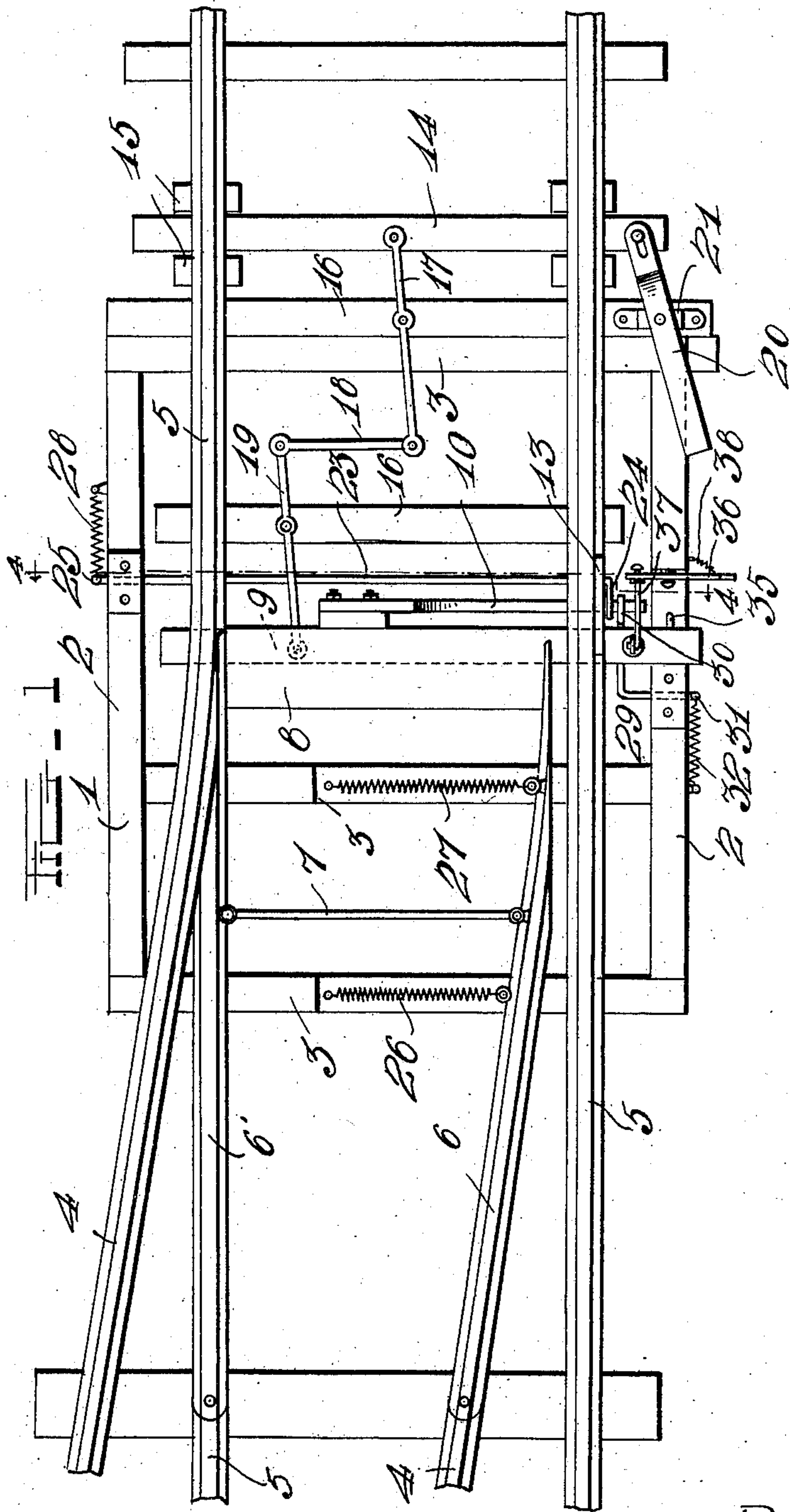


R. A. NEATHERLAND.
RAILWAY SWITCH.
APPLICATION FILED OCT. 17, 1910.

985,275.

Patented Feb. 28, 1911.

3 SHEETS-SHEET 1.



Witnesses

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O. B. Hopkins

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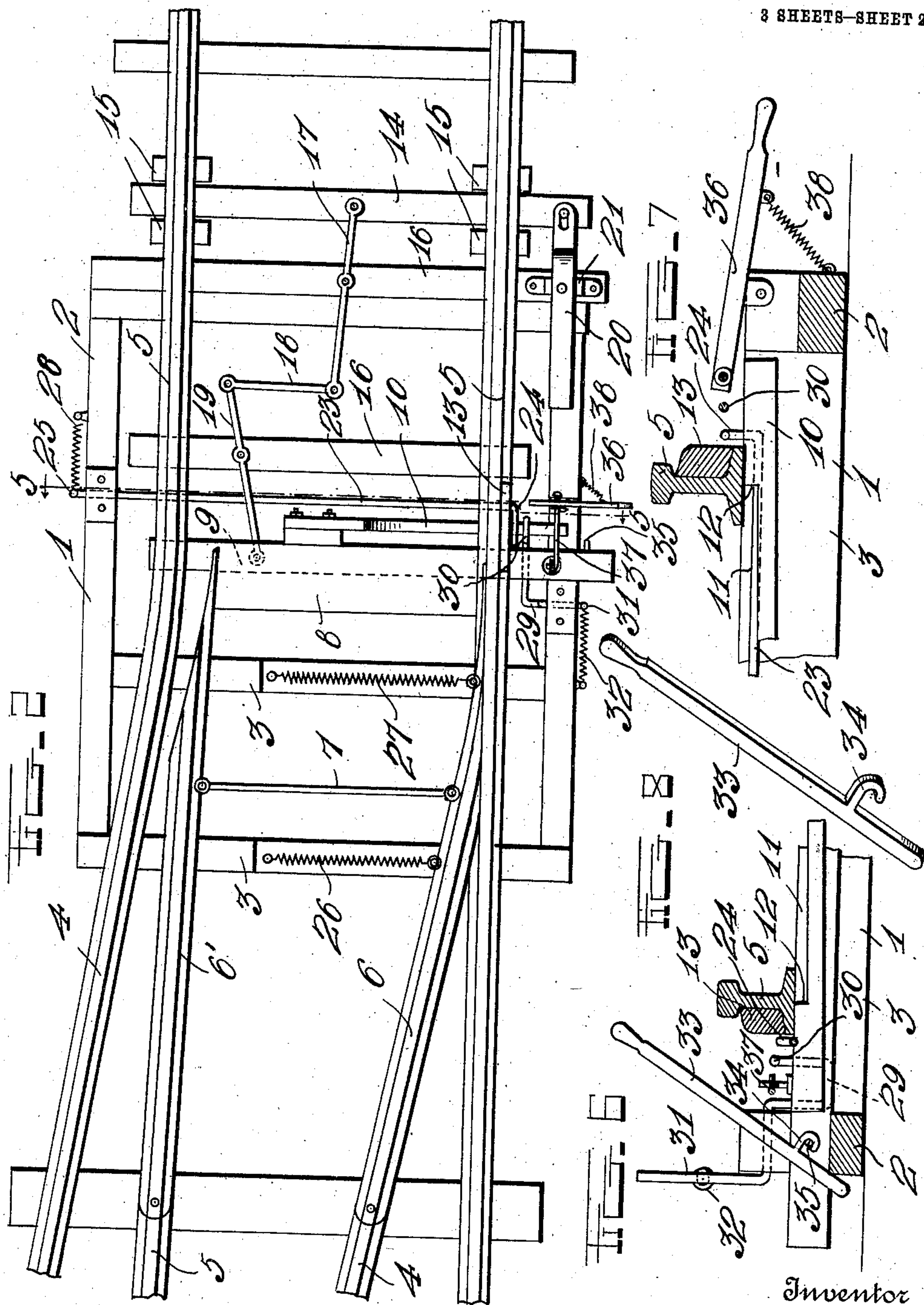
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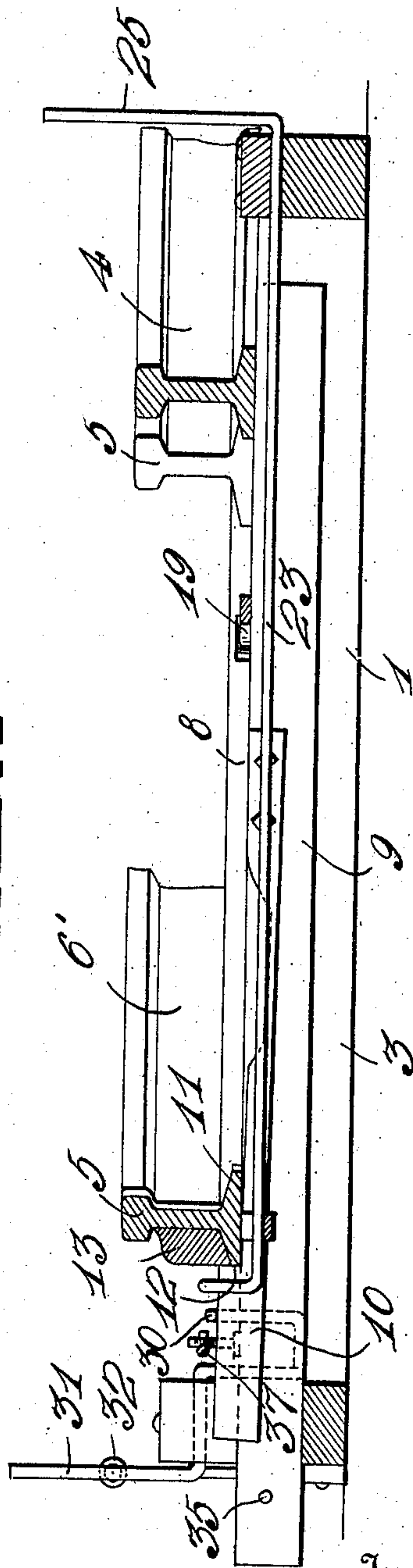
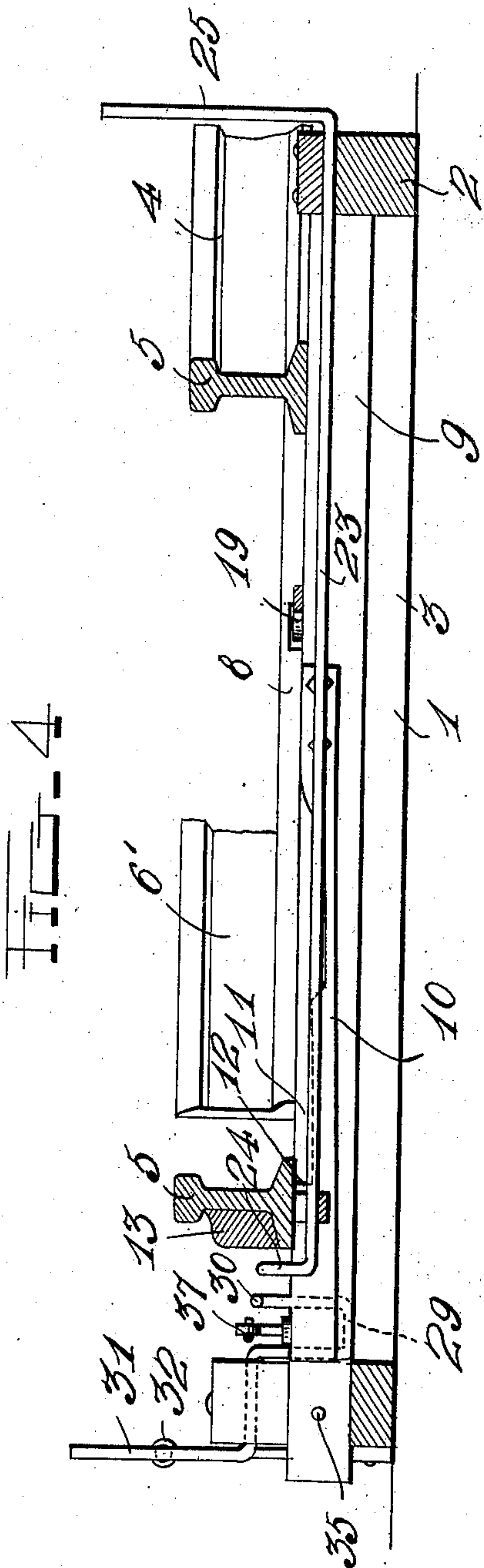
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

RANKEN AQUILLAR NEATHERLAND, OF WYATT, LOUISIANA.

RAILWAY-SWITCH.

985,275.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed October 17, 1910. Serial No. 587,475.

To all whom it may concern:

Be it known that I, RANKEN A. NEATHERLAND, a citizen of the United States, residing at Wyatt, in the parish of Jackson and State of Louisiana, have invented certain new and useful Improvements in Railway-Switches; and I do 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.

This invention relates to improvements in railway switches.

One object of the invention is to provide a railway switch having an improved construction of operating mechanism adapted to be actuated by suitable means on the locomotive and caboose or rear car of a passing train whereby the switch will be opened to permit the train to enter the siding and automatically closed after the train has passed onto or out of the siding.

Another object is to provide an improved locking mechanism for holding the switch open while the train is passing and means whereby the switch may be manually opened and closed.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a plan view showing the switch in closed position; Fig. 2 is a similar view showing the switch locked in open position; Fig. 3 is a side view of one side of the track and the switch operating mechanism showing the lock releasing mechanism; Fig. 4 is a vertical cross section on the line 4—4 of Fig. 1 showing the position of the parts when the switch is closed; Fig. 5 is a similar view on the line 5—5 of Fig. 2 showing the position of the parts when the switch is locked in an open position; Fig. 6 is a detail sectional view of one of the sills of the bed frame and the adjacent rail showing the end of the throw bar of the switch points and illustrating the manner in which

the switch is manually operated; Fig. 7 is a similar view looking in the opposite direction and showing the lever for manually releasing the locking mechanism; Fig. 8 is a detail perspective view of the lever for opening the switch by hand.

In the embodiment of the invention I provide a base or bed frame 1 arranged between the ties and beneath the rails at the point where the siding rails join the main track rails. The base or bed frame comprises longitudinally disposed side bars or sills 2 and a series of cross bars 3 which extend between the ties and beneath the rails and are secured to the latter. The siding rails 4 join the main track rails 5 over the bed frame 1 and one of the rails of said siding tracks is provided with a pivoted switch tongue 6 while the opposite rail of the main track is provided with a pivoted switch tongue 6'. The switch tongues 6 and 6' are connected together by bridle bars 7 and 8. To the lower side of the bridle bar 8 at the upper end of the switch tongues is secured a point connecting throw bar 9, the opposite ends of which pass below the track rails as shown. One end of the throw bar 9 has a sliding engagement with a rectangular recess formed in the side sill 2 of the bed frame 1.

Secured to the outer side or edge of the throw bar 9 is a spring locking bar 10 in the upper side of the free end of which is formed a notch 11 which provides a stop shoulder 12. The stop shoulder is arranged in such position in the locking bar 10 that when the switch points are thrown to the position for opening the switch, the shoulder 12 of the bar 9 will spring up into engagement with a locking plate 13 secured to the outer side of the main track rail thereby securely locking the switch points in an open position and thus connecting the siding with the main track.

Slidably mounted beneath the rails 5 of the main track at a suitable distance ahead of the switch points is a train actuated throw bar 14, said bar being held in sliding engagement beneath the rails 5 preferably by pairs of guide blocks 15 secured to the

under side of the rails as shown. Pivottally connected to one of the ties 16 of the railway adjacent to the throw bar 14 is a switch operating lever 17 one end of which is pivottally connected to the throw bar 14. The opposite end of the lever 17 is connected by the bar 18 to a second switch operating lever 19 which is also pivottally connected to one of the ties 16 of the railway and is connected at its opposite end to the throw bar 9 of the switch point. By thus connecting the train actuated throw bar 14 with the switch point throw bar 9 said bar 9 and the switch point will be actuated in the proper direction for opening the switch when the bar 14 is tripped or actuated by a passing train.

In order to operate the bar 14 at the proper time I provide a shifting lever 20 which is pivottally mounted intermediate its ends upon a suitable supporting standard 21 secured to the outer end of a tie 16. The inner end of the shifting lever 20 is pivottally connected to the adjacent end of the throw bar 14 while the outer or free end of the lever 20 projects upwardly and at an angle to be engaged by a suitable switch throwing device carried by the locomotive of trains passing over the track. When the lever 20 is thus engaged by the operating device on the locomotive, said lever will be rocked on the standard 21 in the proper direction for shifting the throw bar 14 laterally and thus actuating the levers 17 and 19 to cause the throw bar 9 to shift the switch points to an open position, and this movement of the throw bar 9 also shifts the spring locking bar 10 laterally until the stop shoulder 12 thereon comes opposite to the locking plate 13 whereupon said shoulder will spring into engagement with said point and thereby hold the switch points in an open position.

In order to release the locking bar from engagement with the locking plate to permit the switch points to again close I provide a suitable releasing mechanism arranged on opposite sides of the track. The releasing mechanism on the right hand side of the track for releasing the switch points when the train has passed onto the siding comprises a rock shaft 23 which is mounted in suitable bearings on the inside of the rail and extends across beneath the same as shown. On the end of the shaft 23 adjacent to the free or shouldered end of the locking bar 10 is formed a right angular releasing finger 24 which engages the upper side of the shouldered end of the locking bar as shown. The opposite end of the rock shaft is mounted in a suitable bearing on the sill 2 of the bed frame and said end of the shaft is provided with an upwardly projecting crank arm 25 which is adapted to

be engaged by a suitable tripping device carried by the caboose or rear car of the train whereby when said caboose or rear car has passed onto the siding said arm will be engaged and swung downwardly thereby rocking the shaft 23 and turning the finger 24 thereon down into engagement with the free or shouldered end of the spring locking bar 10 thereby depressing said end of the bar and disengaging the stop shoulder 12 on the stop plate 13 whereupon the switch point will be thrown back in the opposite direction to a closed position by coiled point retracting springs 26 and 27 which are secured to the cross bars 3 of the bed frame.

The crank arm 25 after being actuated by the tripping device on the caboose or rear car of the train is restored to its normal position by a coiled spring 28 connected thereto and to a suitable support on the bed frame thereby disengaging the finger 24 from the locking bar. It will be understood that the train in backing out of the siding will automatically open the switch by the engagement of the wheel flanges between the switch point 6' and the adjacent siding rail 4 thus permitting the train to move from the siding onto the main track rails and in order to again close the switch after the train has passed onto the siding I provide a releasing mechanism for the locking bar comprising an angularly bent rock shaft 29 which is revolubly mounted in a suitable bearing on the sill 2 of the bed frame and passes beneath the throw bar 9 of the switch point and has its free end bent upwardly adjacent to the shouldered end of the locking bar as shown. On the upwardly bent end of the shaft 29 is formed a bar releasing finger 30 which when the shaft is rocked in the proper direction is adapted to be brought into engagement with the shouldered end of the locking bar thereby depressing the same and disengaging the shoulder thereon from the locking plate 13. On the opposite end of the shaft is formed an upwardly projecting crank arm 31 which is adapted to be engaged by the tripping device on the locomotive which actuated the shifting lever 20 or by some other shifting mechanism whereby the shaft 29 will be rocked to release the locking bar in the manner described. In order to restore the rock shaft and crank arm to their normal position after being acted upon by the tripping device of the train I provide a retracting spring 32 which is connected at one end to the crank arm and at its opposite end to a suitable support on the sill 1 of the bed frame.

In order to permit the switch to be manually opened I provide a switch throwing lever 33 having arranged thereon a hook

34 which is adapted to be engaged with a stud 35 secured to and projecting laterally from one side of the throw bar 9. When the hook 34 is thus engaged with the stud 5 35 the lower end of the lever is engaged with the sill 1 of the bed frame whereupon when the upper end of the lever is swung outwardly said bar 9 will be shifted laterally and the switch pin thus thrown to an open 10 position in which position they will be locked by the bar 10 in the manner described.

In order to manually release the locking bar and thus permit the springs to close the switch I provide a releasing lever 36 which 15 is pivotally mounted in the recessed portion of the sill 1 and is connected at its inner end to a link 37 which passes over and engages the shouldered ends of the locking bar and is loosely connected with the adjacent end 20 of the throw rod 9 whereby when the outer end of the lever 36 is swung upwardly and the lower end downwardly the shouldered end of the locking bar will be depressed thus disengaging the stop shoulder 12 from the 25 locking plate 13 which will permit the switch point to close in the manner described. The lever 36 is retracted and held in a normal position by a coiled retracting spring 38 secured to the outer end thereof 30 and to the sill 1 as shown.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without re- 35 quiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the ap- 40 pended claims.

Having thus described my invention, what I claim is:

1. In a railway switch the combination 45 with the main and side track rails of switch points pivotally connected to said rails, bridle bars to connect said switch points together whereby the same will move in unison, springs to close said points and hold the same 50 in closed position, a switch point throw rod connected to said switch points, a train operated switch throwing mechanism comprising a sliding throw bar, a series of operating levers connected together and to said throw 55 bars, a pivoted shifting lever connected with one of said throw bars and adapted to be engaged and shifted by a suitable tripping mechanism carried by the train and a spring locking bar actuated by the movement of said 60 switch points, a locking plate secured to one of the track rails, a stop shoulder formed on said locking bar and adapted to spring into engagement with said locking point when the

switch points are shifted to an open position, a train operated releasing mechanism 65 adapted to release said locking bar when the train has passed onto the siding and a train operated releasing mechanism adapted to release said bar when the train moves out of the siding and onto the main track. 70

2. In a railway switch the combination with the main and side track rails of pivoted switch points connected to said rails, means to connect said points together whereby they will move in unison, springs connected to 75 the points and adapted to close and hold the same in closed position, a train actuated switch throwing mechanism adapted to shift said points to an open position, a spring locking bar actuated by the movement of 80 said switch points and having formed therein a stop shoulder, a locking plate adapted to be engaged by said stop shoulder when the switch points have been thrown to open position, a train actuated releasing 85 mechanism adapted to release said locking bar when the train has passed onto a siding, said releasing mechanism comprising a rock shaft, a releasing finger formed on one end of said shaft and adapted to be turned into 90 engagement with the shouldered end of said locking bar whereby the latter is released, a crank arm formed on the opposite side of said shaft and adapted to be engaged by a tripping device carried by the rear car of the 95 train whereby said shaft and finger are operated to release the locking bar, a spring to restore said arm and shaft to their normal positions, a releasing mechanism adapted to release said locking bar when the train has 100 passed out of the siding, said mechanism comprising an angular rock shaft, a releasing finger formed on one end thereof and adapted to operatively engage the shouldered end of the locking bar whereby the 105 latter is released, a crank arm formed on the opposite end of said shaft and adapted to be engaged by the tripping device carried by the train and a spring to restore said arm and shaft to their normal positions. 110

3. In a railway switch the combination with the main and side track rails of switch points pivotally connected to said rails, springs to close said switch points and hold the same in closed position, a throw bar con- 115 nected to said switch points, a train actuated switch throwing mechanism adapted to shift said switch points to an open position, a locking bar adapted to hold said switch points in open position, a train actuated re- 120 leasing mechanism adapted to release said locking bar whereby said springs are permitted to close the switch points, a manually operated switch throwing mechanism comprising a stud secured to and projecting 125 from said throw bar, a shifting lever having

arranged thereon a hook adapted to be engaged with said stud whereby the throw bar and switch points are shifted to an open position, and a manually operated lock releasing mechanism comprising a pivoted lever, 5 a link connected to one end of said lever and adapted to engage said locking mechanism whereby the latter is released and a spring to restore said lever to its normal position.

In testimony whereof I have hereunto 10 set my hand in presence of two subscribing witnesses.

RANKEN AQUILLAR NEATHERLAND.

Witnesses:

R. L. HAGLER,
J. H. STONE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
