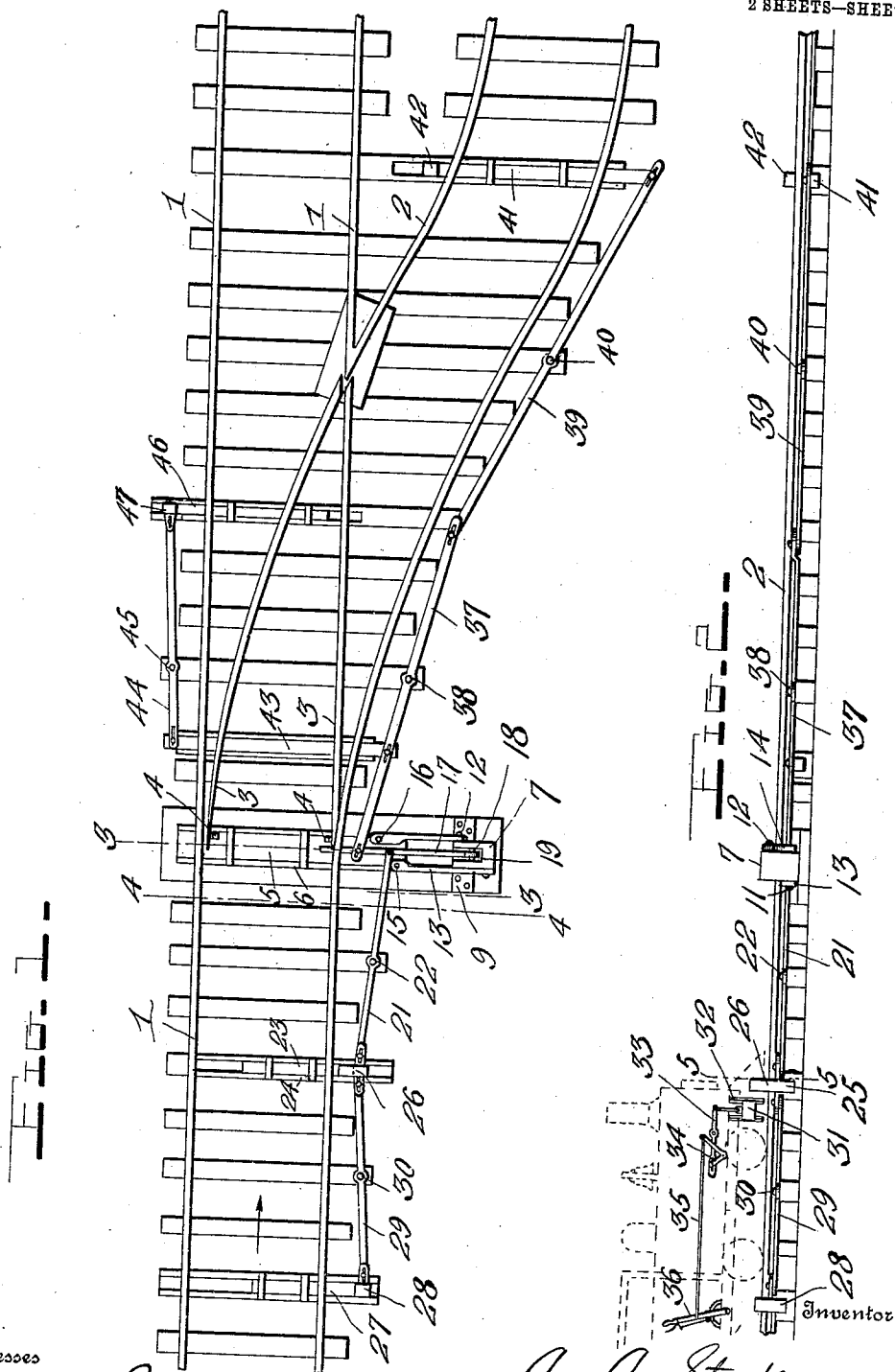


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A. A. STOCK.
SWITCH THROWING AND LOCKING DEVICE.
APPLICATION FILED JULY 17, 1909.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



Witnesses

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Fig. 3.

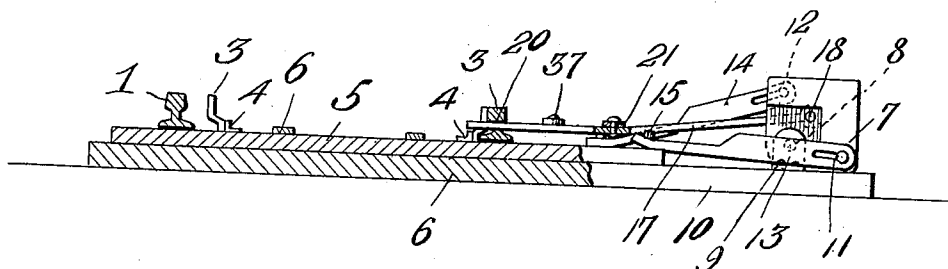


Fig. 4.

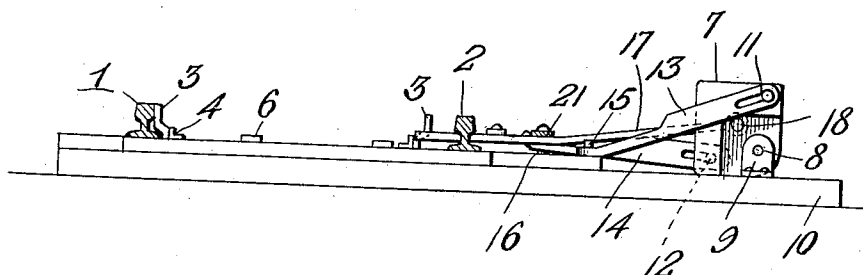
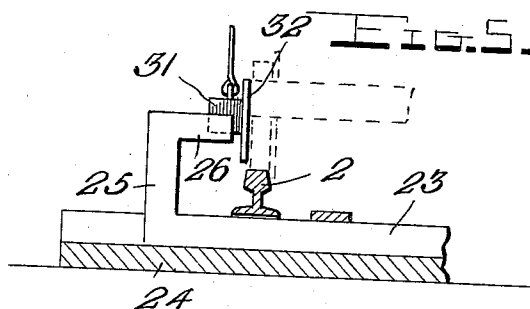
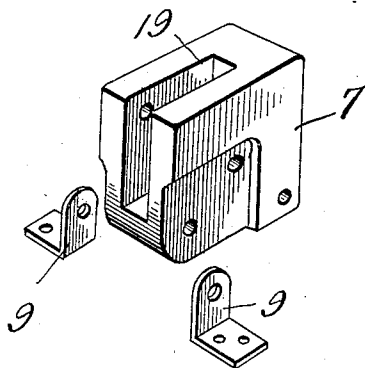


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT A. STOCK, OF PAICINES, CALIFORNIA.

SWITCH THROWING AND LOCKING DEVICE.

954,548.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed July 17, 1909. Serial No. 508,163.

To all whom it may concern:

Be it known that I, ALBERT A. STOCK, a citizen of the United States, residing at Paicines, in the county of San Benito and State of California, have invented certain new and useful Improvements in Switch Throwing and Locking Devices, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in switch point throwing and locking devices.

The object of the invention is to provide simple and practical mechanism whereby the points of a switch may be automatically thrown to either open or closed position by suitable means on a passing locomotive, car, or the like and which, when thrown, will be automatically locked against casual displacement.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a main line and a siding showing the application of my invention; Fig. 2 is a side elevation of the same, and of the operating means on the locomotive, the latter being indicated in dotted lines; Figs. 3 and 4 are vertical sectional views taken respectively on the planes indicated by the lines 3—3 and 4—4 in Fig. 1; Fig. 5 is a detail vertical section taken on the plane indicated by the line 5—5 in Fig. 2; and Fig. 6 is a perspective view of the locking member and its pivot brackets.

In the drawings 1 denotes the track rails of the main line, 2 the track rails of the siding, and 3 the movable switch point. The latter is suitably secured as at 4 to a switch bar 5 arranged transversely on the track for sliding movement in suitable guides 6.

7 denotes the improved switch locking member preferably in the form of an angular block pivoted at its angle on a horizontal pivot 8 mounted in angular bearing brackets 9 secured to a suitable base 10. While this is the preferred manner of constructing and mounting the member 7 it will be understood that it may be otherwise constructed and mounted.

Arranged adjacent to the diagonally opposite corners of the member or body 7 and at equal distances from the pivot 8 are two pivots 11, 12. These pivots preferably project from opposite sides of the member 7 and are loosely engaged by the slotted ends of two links 13, 14, the opposite ends of which latter are pivotally connected at 15, 16, respectively, to the switch point bar 5. It will be seen that when the member 7 is swung from one side to the other of its pivot 8, the links 13, 14 will shift the switch bar and consequently throw the switch point to either open or closed position according to the direction of movement of the member 7 and it will also be noted that the pivots 11, 12 are so disposed with respect to the pivot 8 that when said member reaches the limit of its movement in either direction, one of the pivots 11, 12 will drop beneath the horizontal plane of the pivot 8 and thereby lock the switch bar against casual shifting movement to retain the switch points in the desired position.

While the member 7 may be actuated by any suitable means, I preferably provide a system of connected levers and links shown in Fig. 1 which parts actuate a link 17 having one end suitably mounted for sliding movement and its other end pivotally connected at 18 to the member 7. The pivot 18 is arranged at a point between the pivots 11, 12 so that it will always be disposed in a plane above the pivot 8 and consequently will permit the member 7 to be easily swung from one side to the other. The pivot end of the link 17 is preferably arranged in a recess 19 formed in the member 7 and while its other end may be guided in any suitable manner, it is here shown as being arranged for sliding movement in a transverse opening 20 in one of the track rails.

21 denotes a lever fulcrumed intermediate its ends on a vertical pivot 22 and having one of its ends pivotally connected to the link 17 and its other end loosely pivoted to a slide 23 arranged transversely of the main line in suitable guides 24. The outer end of the slide 23 has an upstanding portion 25 from the inner face of which latter projects a horizontal portion 26. A similar transverse slide 27 is arranged on the main line adjacent to the slide 24 and has at its outer end an upstanding portion 28. The slide 27

is loosely pivoted to one end of a lever 29 arranged on a vertical pivot 30 and having its other end loosely connected to the slide 23 whereby said slides will be connected for simultaneous movement in opposite directions and when either is actuated the link 17, and consequently the member 7 and switch bar 6, will be shifted.

For the purpose of operating the portions or arms 26, 28 of the two slides 23, 27, I preferably provide on the locomotive, car, or other vehicle which travels over the tracks, a can or wedge shaped member 31 arranged for vertical sliding movement in suitable guides 32 and connected by a link to one end of a lever 33 pivoted intermediate its ends. The other end of the lever 33 is connected to one arm of a bell crank 34, the other arm of which latter is connected by a link 35 to a hand lever 36 arranged within the locomotive cab and provided with suitable locking means. The parts 26, 28, 31 are so constructed that when the cam 30 is in its elevated position it will actuate the arm or projection 26 when the locomotive passes the slide 23 and when said cam 31 is in its lowered position, it will actuate the arm or projection 28 of the slide 27.

37 denotes a lever fulcrumed intermediate its ends on a vertical pivot 38 and having one end loosely pivoted to the link 17 and its other end loosely pivoted to another lever 39 disposed alongside of the siding 2 and fulcrumed intermediate its ends on a vertical pivot 40. Said lever 39 is loosely pivoted to a slide 41 arranged transversely of the siding 2 and having on one of its ends a projection or arm 42 similar to the part 28. The lever 37 is loosely pivoted to one end of a transverse slide 43 the other end of which is similarly pivoted to one end of a lever 44 arranged longitudinally of the main line 1 and fulcrumed intermediate its ends on a vertical pivot 45. The other end of the lever 44 is loosely pivoted to a slide 46 similar to the slide 27 and having an up-standing arm or projection 47.

In operation, assuming the parts to be in the position shown in Fig. 1, when an engine is traveling on the main line in the direction indicated by the arrow in Fig. 1 and the engineer desires to pass upon the siding, he actuates the lever 36 to raise the cam 31 so that it will engage and actuate the arm or projection 26 on the slide 23. When this occurs the links 17 will throw the member 7 from its position shown in Fig. 3 to that shown in Fig. 4 thereby opening the switch. When the slide 23 is actuated as just mentioned the slide 27 will be shifted inwardly so that should another locomotive approach in the same direction and desire to keep on the main line the engineer of such locomotive lowers his cam 31 so that it engages the

arm or projection 28 of the slide 27. Should the switch be open and the locomotive approaches it from the opposite direction on the main line the engineer will lower his cam so that it will engage the arm or projection 47 on the slide 46 and thereby cause the switch to be closed. Should a locomotive on the siding approach the switch when the latter is closed, the engineer will lower the cam 31 so that it engages and actuates the projection or arm 42 of the slide 41.

While I have shown and described in detail the preferred embodiment of the invention I wish it understood that changes in the form, proportion, and details of construction may be resorted to within the spirit and scope of my invention.

Having thus described the invention, what is claimed is:

1. The combination of track rails, a switch point, a switch point slide, a locking member pivoted to swing to either side of one plane of its pivot, pivots on said member and adapted to pass the plane of the pivot of said member when the latter reaches the limit of its movement in either direction, connections between the pivot on said member and said switch slide, and means for actuating said member.

2. The combination of track rails, a switch point, a switch point bar, a locking member adapted to swing to either side of the vertical plane of its pivot, a pivot arranged upon said member to drop beneath the horizontal plane of its pivot when said member reaches the limit of its movement in either direction, links connecting the pivots on said member to said switch bar, and means for actuating said member.

3. The combination of track rails, a switch point, a switch point bar, a locking member adapted to swing to either side of the vertical plane of its pivot, a pivot arranged upon said member to drop beneath the horizontal plane of its pivot when said member reaches the limit of its movement in either direction, links connecting the pivots on said member to said switch bar, an actuating link for said member arranged for sliding and swinging movement and pivoted to one end of said member at a point between the above mentioned pivots on said member whereby the pivot for said actuating link will always be disposed above the horizontal plane of the pivot of said member, and means for moving said actuating link.

4. The combination of track rails, a switch point, a switch point bar, a locking member adapted to swing to either side of the vertical plane of its pivot, a pivot arranged upon said member to drop beneath the horizontal plane of its pivot when said member reaches the limit of its movement in either direction, links connecting the pivots on said

member to said switch bar, an actuating link
for said member arranged for sliding and
swinging movement and pivoted to one end
of said member at a point between the above
5 mentioned pivots on said member whereby
the pivot for said actuating link will always
be disposed above the plane of the pivot
of said member, a lever for shifting said

actuating link, and a slide for shifting said
lever.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses.
ALBERT A. STOCK.

Witnesses:

J. D. YOAKLEY,
E. M. RICKETTS.

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