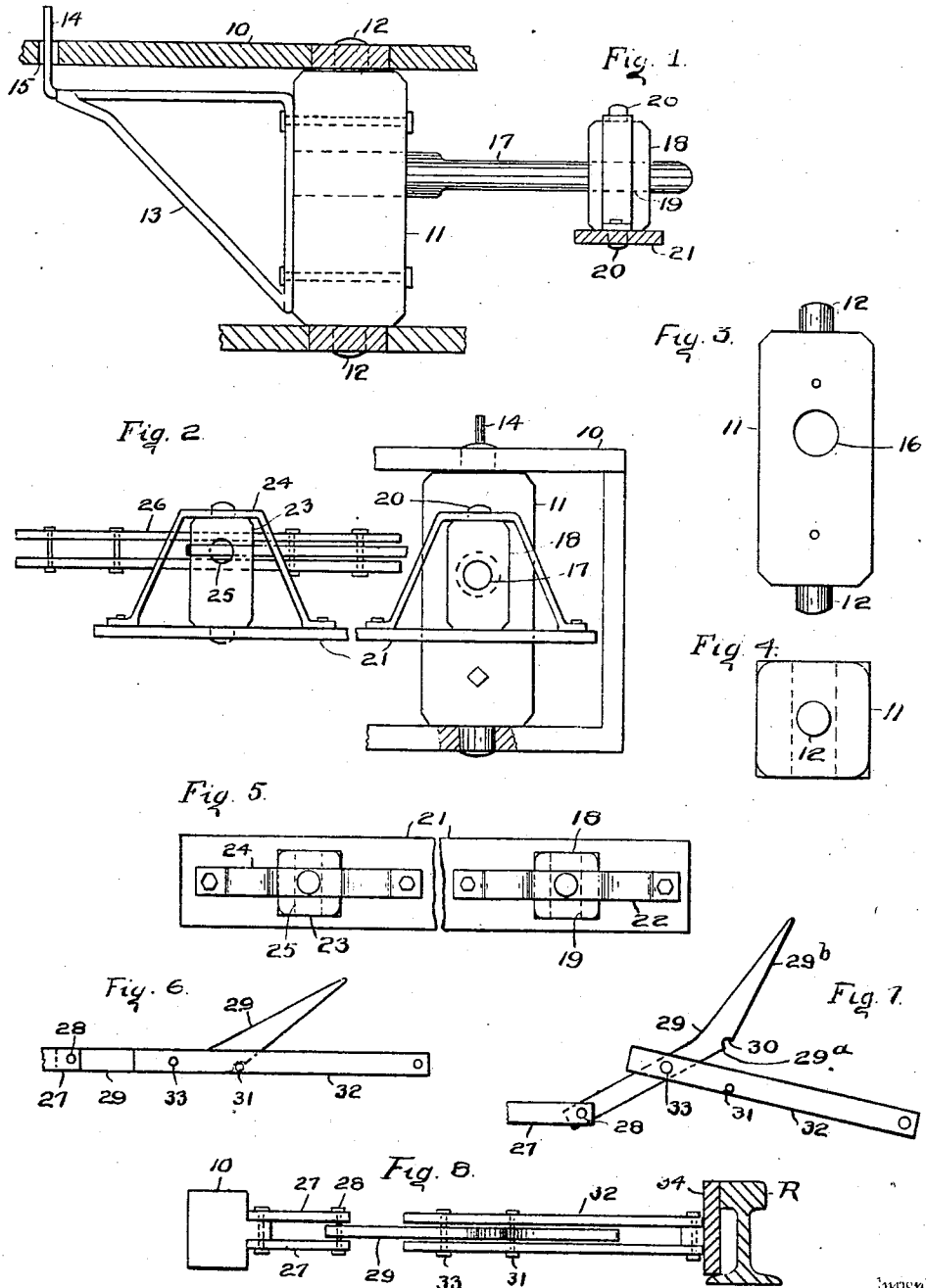


S. SWANN.
 SWITCH THROWING AND LOCKING DEVICE.
 APPLICATION FILED FEB. 9, 1910.

968,433.

Patented Aug. 23, 1910.

3 SHEETS—SHEET 1.



Witnesses
 Helen F. Glenn.
 Gladys Glenn.

Scott Swann

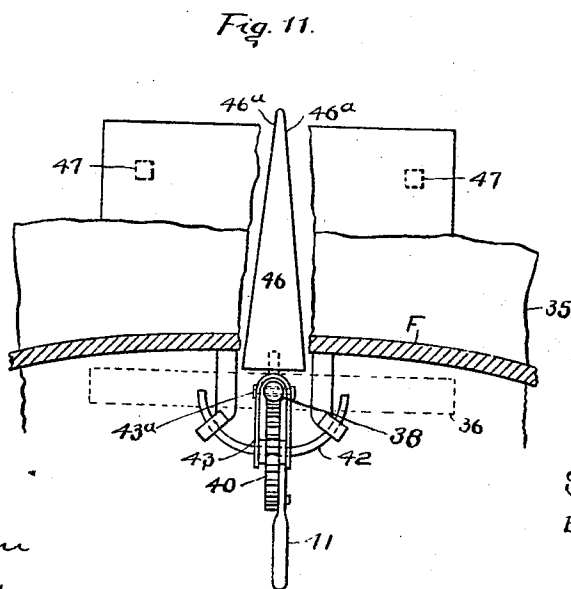
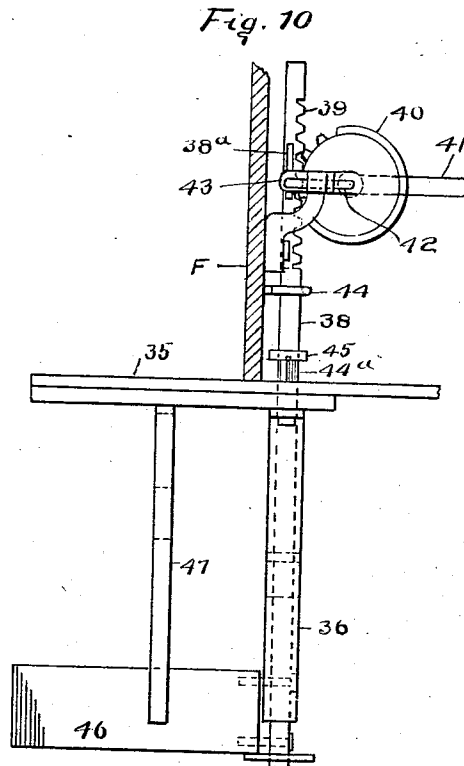
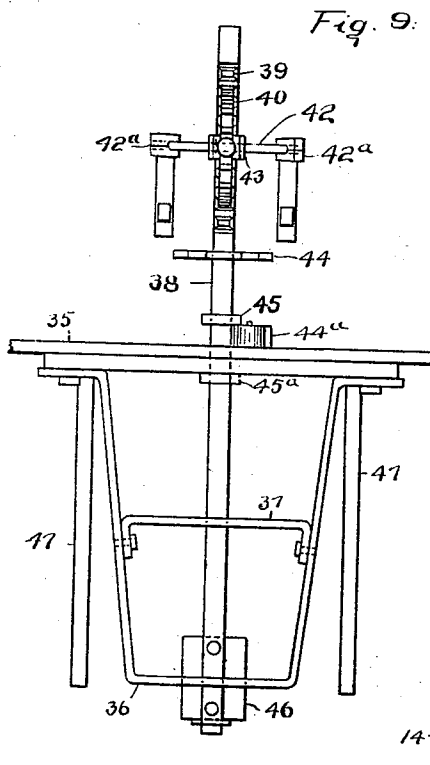
by
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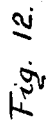


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968,433.

3 SHEETS--SHEET 3.



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UNITED STATES PATENT OFFICE.

SCOTT SWANN, OF FORT WAYNE, INDIANA.

SWITCH THROWING AND LOCKING DEVICE.

968,433.

Specification of Letters Patent.

Patented Aug. 23, 1910.

Application filed February 9, 1910. Serial No. 542,982.

To all whom it may concern:

Be it known that I, SCOTT SWANN, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented new and useful Improvements in Switch Throwing and Locking Devices, of which the following is a specification.

This invention relates to switch locking devices and to means for automatically operating the same.

Its object is to provide a railway switch with a simple locking device which will securely retain the switch in its closed position.

Another object is to provide means connected to the locking device which are arranged to be actuated by the car as it approaches the switch.

In many cases on traction lines, where a spring switch is not practicable, a loose switch is arranged which must be thrown by hand. The pivoted end of the switch is heavy and thick and oftentimes the forward truck of a car in passing over it will throw the switch so that the rear truck will pass onto the other track. There has been no practicable way to lock such a switch so as to prevent such an occurrence and it is one of my objects to provide means which will prevent the unnecessary or undesirable opening of a switch when it is once closed.

The invention consists in the novel features of construction and arrangement of parts hereinafter described and illustrated in the drawings in which—

Figure 1 is a side elevation of the pitman actuating connections; Fig. 2, a front elevation of the same with the addition of the switch locking device which is operatively connected to the pitman; Figs. 3 and 4, views of the driving post; Fig. 5, a plan view of the pitman and knuckles mounted thereon; Figs. 6 and 7 plan views of the switch locking device; Fig. 8, a rear elevational view of the same operatively connected to the switch; Fig. 9, a front elevation of the means on the car for operating the track devices; Fig. 10, a side elevation of the same; Fig. 11, a plan view of the same, and Fig. 12, a plan view of the entire track device in connection with the rails.

Referring to the drawings I provide between the rails of the track and preferably buried beneath the surface of the ground a frame, or box, 10 in which a driving post 11 is vertically and rotatably mounted by stems

12 which project into suitable openings in the frame. A bracket 13 is fixed on one side of the post 11 and carries an upwardly projecting member 14 which projects above the surface of the ground a suitable distance, a slot 15 being provided in the top of frame or box 10 to permit of arcuate movement of member 14.

Post 11 is provided with a transverse opening 16 into which is fixed a bolt 17, the bolt projecting a suitable distance from the post. On the outer end of bolt 17 is loosely fitted a block or knuckle 18 having a central opening 19 therein which the end of the bolt projects into or passes through. Block 18 is provided with upper and lower projecting stems 20, the lower stem projecting loosely into an opening in pitman 21, the upper one passing loosely through an opening in bracket 22 which is secured to the pitman. Block 18 is thereby free to turn on the pitman and bolt 17 is free to slide in opening 19. Pitman 21 is formed of any suitable material and preferably is arranged at right angles to the direction of bolt 17. It extends a suitable distance toward the rail R. A block or knuckle 23 is arranged between pitman 21 and bracket 24 in precisely the same manner as block 18 and is also provided with a transverse opening 25. Adjacent to block 23 is arranged a switch operating and locking device 26 comprising a support 27 which is fixed in a suitable manner to a block or other abutment 10' which is fixed to the bottom of box or frame 10. A lever 29 is pivoted at one end to support 27 by bolt or shaft 28. This lever is also pivoted at any convenient point, as at 33, in its length to a connection 32 which is pivoted to the switch 34. In one side edge of this lever (Figs. 6 and 7) is formed a recess 30 which is arranged therein between the pivotal point 33 and the free end 29^b of the lever and preferably at the bend 29^a. This recess is adapted to register with a bolt or cross piece 31 which is secured to bars 32 near the edge thereof which is farthest away from pitman 21. The lever 29 and connection 32 and support 27 are so arranged that the lever will rock in a horizontal plane. The free end 29^b of the lever is bent toward the pitman and is slidable in opening 25 in knuckle or block 23. The switch may be any of the usual track switches now in use.

In the above description the devices referred to which are adapted to move the

rocking lever 29 are themselves adapted to be operated by the movement, toward either rail of the track, of the projection 14 on bracket 13. It is apparent that many devices for moving the lever 29 may be designed and devised which will accomplish my purpose. The devices illustrated in the drawings are intended to be operated from the car, means for which I will now describe.

In Figs. 9, 10 and 11 I show a means on the car which is adapted to move projection 14 toward either rail, thereby rotating post 11 and moving pitman 21 so as to move lever 29 on its pivot. In these figures the car floor 35 carries on its under surface a bracket 36 having a cross brace 37. This bracket furnishes a bearing for revoluble shaft 38 which shaft passes up through brace 37 and the floor 35 to a convenient point within the car vestibule. The upper extremity of shaft 38 is provided with a rack 39, engaging which is a suitable gear or segment gear 40. This gear is provided with a handle 41 and is mounted on a curved shaft 42, which shaft is supported in suitable bearings 42^a, which are secured in any suitable manner to the vestibule front F or car platform. Gear 40 may be loosely mounted on shaft 42 and the shaft fixed, as conveniently as in the manner just described. Any means for supporting gear 40 which will permit the gear to be rotated on its axis and at the same time be capable of axial movement corresponding to the rotation of shaft 38 will suffice for my purposes.

Gear 40 is loosely secured to shaft 38 by side plates 43, which at one end loosely engage the gear hub or shaft 42, the other ends of the plates being connected by a rod 43^a which passes through a slot or opening 38^a in shaft 38. Handle 41 may be moved to the right or left carrying gear 40 and shaft 38 with it and at the same time the gear may be rotated by raising or lowering handle 41. A guide 44 may also be provided to give rigidity to the shaft 38.

Any suitable means for holding up the shaft 38 when elevated by the rotation of gear 40 will suffice. In the drawings I show a pawl 44^a which is pivoted to the floor 35 adjacent to shaft 38 and is arranged to pass beneath a flange 45 on shaft 38. This pawl will be operated by the foot so that it may be released from engagement with the flange, thereby permitting the shaft to be lowered until flange 45 comes into contact with the floor of the car. Flange 45 therefore operates as a stop to limit the downward movement of the shaft. A similar flange 45^a may be provided on the shaft at a suitable point beneath the floor to limit the upward movement of shaft 38.

On the lower end of shaft 38 is fixed a striking blade 46 which extends transversely with the shaft toward the forward end of

the car. This blade is preferably tapered outwardly and may be formed of any suitable material. Abutments 47 are provided on the under surface of the platform 35 forwardly of shaft 38 and are arranged on each side of blade 46 and in the path of its movement a sufficient distance therefrom to permit a sufficient angularity to be given to the blade before it strikes the abutment. This abutment prevents further rotation of blade 46 and insures the movement of projection 14 when the blade strikes it.

By the use of the rack 39 and gear 40 the shaft 38 and blade 46 may be raised and lowered at will. By mounting the gear so that it is movable laterally and connecting it to the shaft 38, the gear and shaft may be rotated or turned to throw the blade 46 against either abutment 47.

In operation with the blade elevated and the switch open the projection 14 is to the right of its central position and locking lever 29 is pulled out as shown in Fig. 7, and it is now desired to close the switch. Blade 46 is lowered to come into the path of projection 14 by operating gear 40, and by turning the gear, by means of the handle, to the left the shaft and blade will also be turned to bring blade 46 against abutment 47. The tapering or inclined surface 46^a of blade 46 now being in the path of projection 14 strikes that projection and forces it in its slot to the left. This motion of the projection turns post 11 and bolt 17 to the right, pulls pitman 21 to the right and also rotates lever 29 toward bars 32, thereby pushing switch 34 against the rail R. Recess 30 is now in register with cross piece or bolt 31 and since said bolt is beyond the pivotal point 28 of lever 29 relative to pitman 21 no amount of end thrust on the lever at the switch end can rock it. The recess and bolt 31 securely lock the switch in its closed position. To open the switch, blade 46 will be thrown to the left so that its right hand side surface will come into contact with projection 14. The motion of the post and pitman will then be to the left away from the switch, thereby pulling out the lever 29 and opening the switch.

It is apparent that many modifications in details of construction of the several parts are possible, but I believe that all such will be equally well within my invention, hence I do not wish to be limited to the precise structure herein described and illustrated in the drawings.

What I claim is:

1. The combination with a track switch of a lever connected to the switch and pivoted to a support, a pitman connected to the lever and adapted to rock the lever, means connected to the pitman for reciprocating the same transversely relative to the switch, said means including a member pro-

pecting upwardly and arranged to have arcuate movement, and means to move the member toward or away from the switch.

2. The combination with a track switch
5 of a locking lever connected to the switch and pivoted to a support, a pitman connected to the lever and adapted to rock the lever, means connected to the pitman for reciprocating the same transversely relative to the
10 switch, said means including a member projecting upwardly and arranged to have arcuate movement, and means to move the member toward or away from the switch.

3. The combination with a track switch of
15 a lever pivoted to a fixed support and having a recess therein, a member pivotally connected to the lever and to the switch and having an abutment thereon arranged to register with the recess in the lever, and
20 means to rock the lever to open and close the switch, the parts being so arranged that when the recess is in register with the abutment the switch is locked in position.

4. The combination with a track switch
25 of a locking lever pivotally mounted and connected at one end to the switch, a pitman having a revoluble member thereon which loosely engages the free end of the lever, and means connected to the pitman
30 for reciprocating the same whereby the lever is rocked on its pivot for the purposes described.

5. The combination with a car, the rails
35 of a track and a track switch of a locking lever pivotally mounted and having one of its arms connected to the switch, a pitman connected to the other arm of the lever, means connected to the pitman to reciprocate the same, said means including a movable member projecting upwardly between
40 the rails, and means on the car operative to move said member toward either rail for the purposes described.

6. The combination with a car, the rails
45 of a track and a track switch, of a locking

lever having one of its arms connected to the switch, a reciprocating pitman connected to the other arm of the lever, means to reciprocate the pitman comprising a revoluble post operatively connected to the pitman
50 and having an upwardly projecting member, and a swinging blade on the car arranged to make contact with the member and force the same toward either rail.

7. The combination with a car, the rails
55 of a track and a track switch, of a locking lever having one of its arms connected to the switch, a reciprocating pitman connected to the other arm of the lever, means to reciprocate the pitman comprising a revoluble post operatively connected to the pitman and having an upwardly projecting
60 member, and a blade depending from the car arranged to make contact with the member and having means connected thereto arranged to raise and lower the same and
65 means to swing the blade laterally, whereby when the blade makes contact with the member, the member is forced at will toward either rail.

8. The combination with a track switch
70 of a lever pivoted to a fixed support and having a free end, a member pivotally connected to the lever and to the switch and having an abutment arranged thereon at
75 one side of the longitudinal axis of the member which passes through the pivotal points of that member, a recess in the lever between its pivotal connection with said member and its free end adapted to register
80 with the said abutment, and means to rock the lever on its fixed pivotal point to open and close the switch.

In witness whereof I hereunto sign my name this 5th day of February, 1910.

SCOTT SWANN.

Witnesses:

HELEN F. GLENN,
ELWIN M. HULSE.