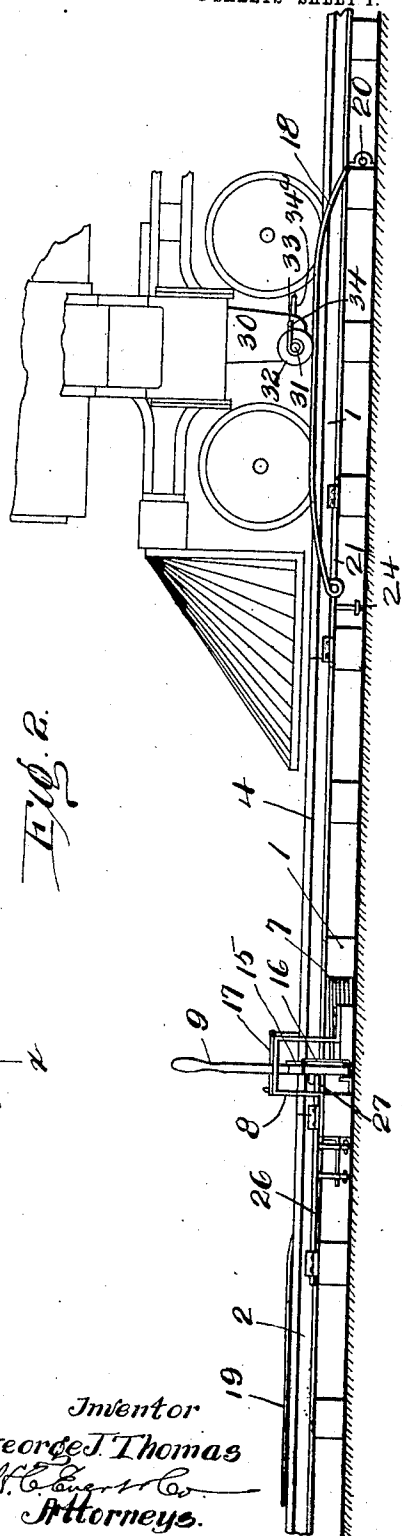
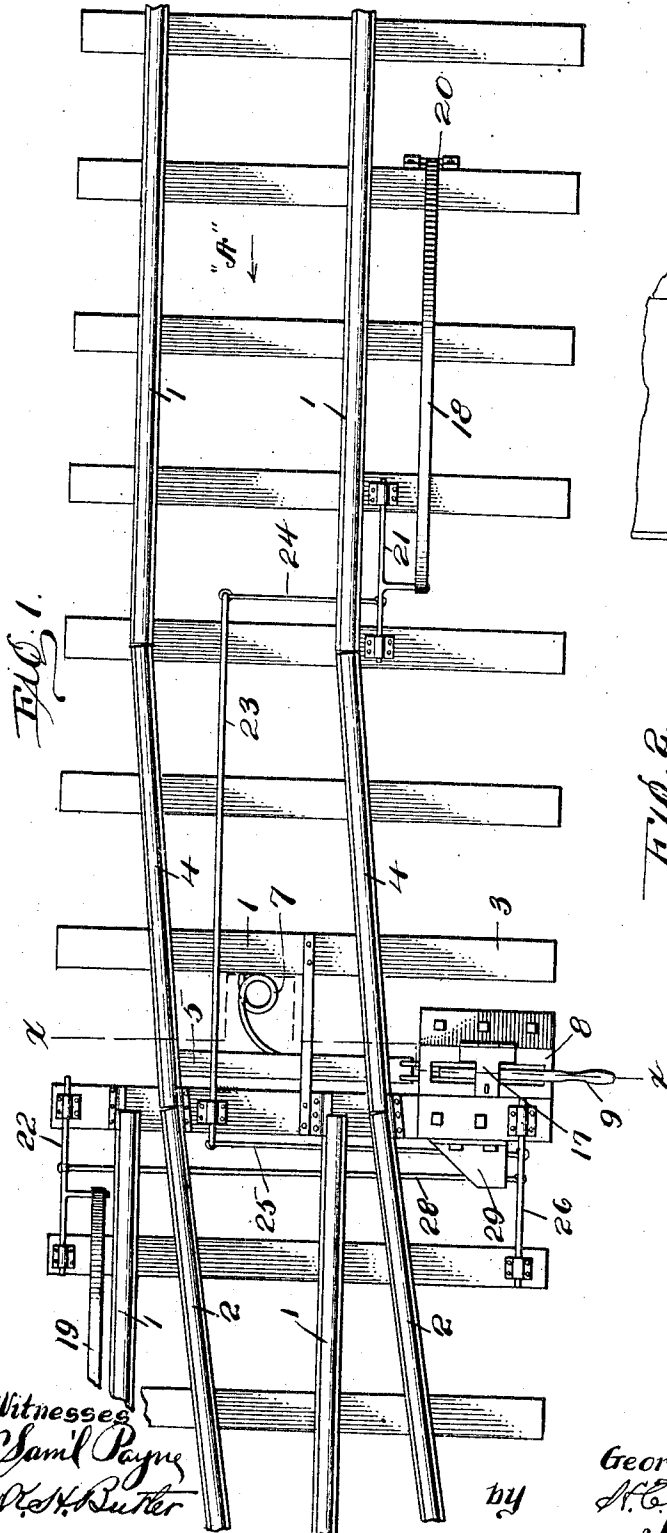


No. 852,401.

PATENTED APR. 30, 1907.

G. J. THOMAS.
SWITCH THROWING DEVICE.
APPLICATION FILED OCT. 19, 1906.

2 SHEETS—SHEET 1.

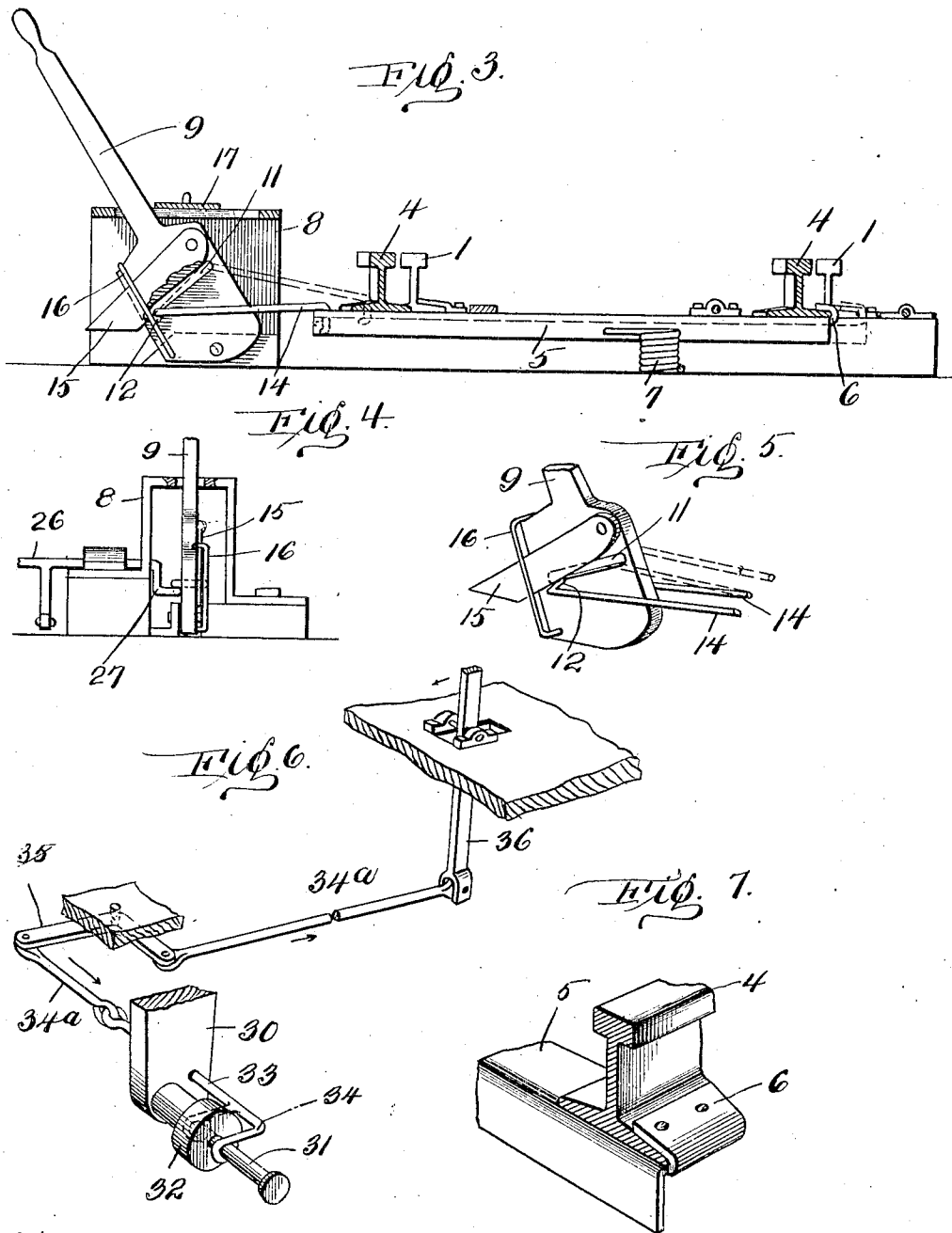


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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE J. THOMAS, OF IRWIN, PENNSYLVANIA, ASSIGNOR OF FIVE-EIGHTHS TO CYRUS SMITH, OF IRWIN, PENNSYLVANIA.

SWITCH-THROWING DEVICE.

No. 852,401.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed October 19, 1906. Serial No. 339,652.

To all whom it may concern:

Be it known that I, GEORGE J. THOMAS, a citizen of the United States of America, residing at borough of Irwin, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Throwing Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in switch throwing devices, and the invention has for its object the provision of novel means for automatically throwing a switch, while a train or car is in motion.

My invention aims to obviate the accidents heretofore incurred by open switches. In this connection, my improved device is applicable to various types of switches as used upon steam and electrical railways. To this end, I have devised a simple and inexpensive track equipment adapted to be manually actuated or automatically operated by certain mechanism carried by a locomotive. The device in its entirety is positive in its operation and free from injury by ordinary use.

The detail construction of my improved switch throwing device will be presently described, and then specifically pointed out in the appended claims.

Referring to the drawings forming part of this specification, like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a plan of a section of track equipped with my improved switch, Fig. 2 is an elevation of the same, illustrating a portion of a locomotive about to operate the switch. Fig. 3 is a cross sectional view taken on the line $x-x$ of Fig. 1, Fig. 4 is an elevation of a lever casing, Fig. 5 is a perspective view of the lower end of a lever, Fig. 6 is a perspective view of the locomotive equipment, and Fig. 7 is a similar view of one end of the switch tongue bar, illustrating the manner of fastening the same thereto.

In the accompanying drawing, I have illustrated a section of track embodying main rails 1 and "siding" rails 2, said rails being supported by ties or sleepers 3, and controlled by pivoted sections of rails 4, corresponding to switch tongues. The tongues 4, as they will be hereinafter termed, are connected together

by a bar 5, which is secured to said tongues, as at 6. To normally maintain said tongues in alinement with the main rails 1, I employ a spring 7, said spring connecting with one of the ties 1 and the bar 5.

At the side of one of the switch tongues 4 is mounted a mechanism for manually throwing the tongues 4, said mechanism consisting of a slotted casing 8 having a lever 9 pivotally mounted therein, said lever extending upwardly through the casing to be easily manipulated. The lower end of the lever 9 is enlarged as at 10 and provided with a slot 11 having a hook-shaped end 12. Engaging in the slot 11 is a U-shaped link 14, which connects with the tongue bar 5. In order that the link 14 will ride in the slot 11, when the lever 9 is moved, I provide the lever with a pivoted arm 15, guided in a yoke 16. The arm normally bears upon the link and the weight of the same insures the end of the link 14 entering the end 12 of the slot 11, whereby when the lever 9 is moved from a vertical position to the obliquity shown in Fig. 3, the tongue bar 5 will be shifted, to "clear" the "siding" track. To lock the lever 9 in its adjusted position to "clear" the siding track, I provide the top of the casing 8 with a hinged strap 17, which can be suitably fastened in a closed position.

The automatic mechanism of my device consists of curved contact arms 18 and 19 located on each side of the main track at any desirable distance from the tongues 4. The arms 18 and 19 are hinged to the ties 1, as at 20 and their free ends are connected to rock shafts 21 and 22 journaled upon the ties 1. Upon the ties 1 centrally of the main track is journaled a rod 23, said rod connecting with the shaft 21 by a link 24, while the opposite end of the rod 23 connects by a link 25 with a crank shaft 26, journaled upon the ties 1 adjacent to the casing 8. The crank end 27 of the shaft 26 extends into the casing 8 and is adapted to impinge the one side of the link 14, to release the lever 9 and allow the spring 7 to return the tongue bar 5 to its normal position.

The rock shaft 22 is connected to the shaft 26 by a link 28, and to limit the movement of the shaft 26, I employ a plate 29, carried by one of the ties 1, upon which said shaft is journaled.

The locomotive equipment comprises a de-

pending bracket 30 carrying an outwardly extending rod 31 upon which a revoluble roller 32 is slidably mounted. Passing through the bracket 30 is a rod 33 having a
 5 forked end 34, to embrace the roller 32, while the opposite end of the rod 33 is connected to suitable rods 34^a, a bell crank 35 and a lever 36, whereby the roller 32 can be shifted from the cab of a locomotive.

10 Operation:—Assuming the switch is in the position shown in Fig. 1 and a train, car or locomotive is traveling in the direction of the arrow "A", and desires to continue on the main track, the engineer manipulates the
 15 lever 36 to move the roller 32 outwardly whereby it will engage the contact arm 18, depress the same, and through the medium of links 24 and 25, and rock shafts 23 and 26, the links 14 will be released. As the crank
 20 end 27 of the shaft 26 strikes the link 14, it is elevated from the hook-shaped end of the slot 11 and the spring 7 moves the bar 5 and link 14, irrespective of the lever 9. Since the bar 5 is fastened to the tongues 4, they will be
 25 moved to "clear" the main track, and the train, car or locomotive can continue upon the main track.

For a locomotive to enter the "siding", it is not necessary to manipulate the lever 36 or
 30 move the switch, as the roller 32 passes between the contact arm 18 and the main rail 1. A locomotive moving in an opposite direction actuates the contact arm 19, to "clear" the main track. To pass from the
 35 "siding" track upon the main track, when the same is "clear" it is necessary for the switch throwing device to be manually operated.

It is thought that the many advantages of
 40 my improved device will be apparent, from the foregoing description, and I desire it to be understood that such changes in the arrangement and minor details of construction as are permissible by the appended claims,
 45 may be resorted to without departing from the spirit and scope of the invention.

What I claim and desire to secure by Letters Patent, is:—

1. In a switch throwing device, the combination with a main track, a siding track,
 50 tongues controlling the passage upon said track, and a locomotive adapted to travel upon said tracks; of a spring-held bar connecting said tongues, a casing mounted adjacent to said tongues, a lever pivoted in said

casing and having a hook-shaped slot formed therein, a link mounted in the slot of said lever and connecting with said bar, a rock shaft journaled adjacent to said casing and adapted to contact with said link, contact arms
 60 mounted at the side of said track and adapted to rock said shaft, an adjustable roller carried by said locomotive and adapted to contact with said arms to move said shaft and release said link from the hook-shaped end of
 65 said slot, means carried by said locomotive to move said roller, and means carried by said casing to lock said lever in a fixed position, substantially as described.

2. In a switch throwing device, the combination with tracks, switch tongues, and a locomotive, of a bar connecting said tongues, a lever pivotally mounted adjacent to said
 70 tongues and having a hook-shaped slot formed therein, a link riding in said slot and connecting with said bar, a rock shaft journaled adjacent to said lever and adapted to contact with said link to elevate the same,
 75 means mounted adjacent to said tracks to rock said shaft, means carried by said locomotive to actuate the first named means, and means to move said bar when said link is moved by said rock shaft, substantially as described.

3. In a switch throwing device, the combination with rails, and switch tongues, of a
 85 spring-held bar connecting said tongues, a slotted lever pivotally mounted adjacent to said tongues, a link loosely mounted in said lever and connecting with said bar, means
 90 mounted adjacent to said rails to move said link and release said spring-held bar, and means engaging said lever to hold said lever in a fixed position, substantially as described.

4. In a switch throwing device, the combination with rails, and switch tongues, of a
 95 slotted lever mounted adjacent to said switch tongues, a link mounted in said lever and adapted to move said tongues, means mounted adjacent to said rails and said lever to
 100 move said link, and means to lock said lever in a fixed position, substantially as and for the purpose described.

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

GEORGE J. THOMAS.

Witnesses:

JAMES B. GALLAGHER,
 JOHN C. FREDERICK.