P. J. REIGER.

SWITCH THROWING MECHANISM.

APPLICATION FILED JULY 15, 1911.

1,021,949.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

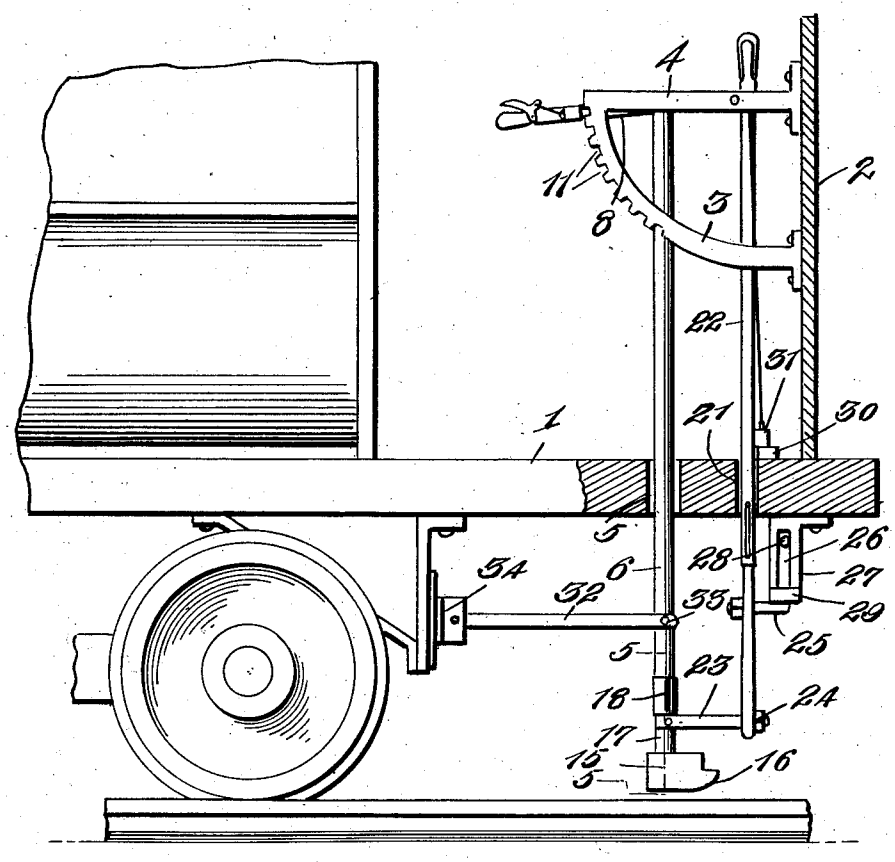

Fig. 2.

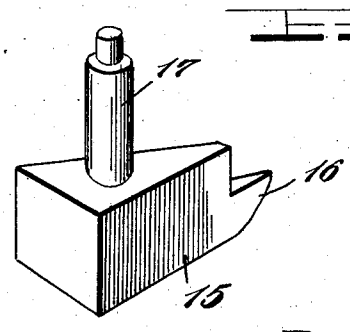

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FIG. 3.

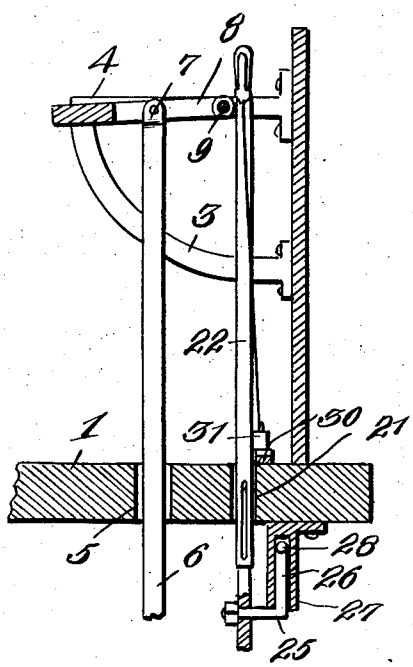


FIG. 5.

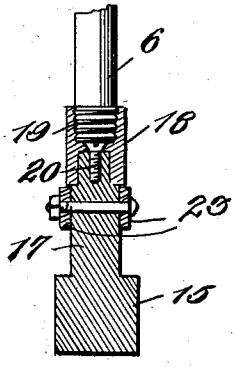
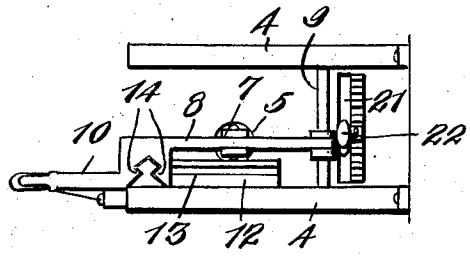


FIG. 2.



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SWITCH-THROWING MECHANISM.

1,021,949. Specification of Letters Patent. Patented Apr. 2, 1912.

Application filed July 15, 1911. Serial No. 638,710.

To all whom it may concern:

Be it known that I, PAUL J. REIGER, a citizen of the United States, residing at Midland, in the county of Midland and State of Texas, have invented certain new and useful Improvements in Switch-Throwing Mechanism, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to new and useful improvements in switch throwing mechanism, and more particularly to the type wherein such mechanism is carried by the car or vehicle and is operative by the motorman or other operator of the car or vehicle whereby the switch may be properly set by the motorman and without the necessity of stopping the car.

The object of this invention is to dispense with the services of a switchman and to obviate the delay caused by the car being stopped while the motorman throws the switch in the ordinary way.

Another object of this invention is to provide a switch throwing mechanism of this class which is strong so that it will not become broken, while in operation, it acts with certainty so that the switch will be positively set in the appropriate position while the car approaches the switch.

Another object of this invention is to provide a device of this character which will possess advantages in points of efficiency, durability, is inexpensive of manufacture and at the same time is simple in construction and operation.

With the above and other objects in view the invention consists in the novel features of construction and the combination and arrangement of parts hereinafter described, pointed out in the claims and shown in the accompanying drawings in which—

Figure 1 is a longitudinal section of a portion of a car platform showing in elevation the switch throwing mechanism which is constructed in accordance with the present invention. Fig. 2 is a top plan view of the mechanism above the platform of the car. Fig. 3 is a vertical sectional view. Fig. 4 is a detail perspective of the switch throwing shoe. Fig. 5 is a sectional view along the line 5—5 of Fig. 1.

Similar reference characters refer to similar parts throughout the drawings.

Switch throwing mechanism constructed in accordance with the present invention is capable of application generally to railways of various kinds, although it is especially applicable to street railways owing to the numerous switches and the saving of time in the operation of such switches and, in view of the fact that the services of the usual switchmen may be dispensed with, as the switches may be properly set by the motorman or operator of the car and without the necessity of stopping the car.

In the accompanying drawings, I have shown certain embodiments of the invention as applied to a street railway car. It will be understood, however, that these embodiments of the invention are shown as examples only, and that certain modifications and changes may be made in the mechanism in order that the invention may be applied to the best advantage in each particular case.

In practice, the mechanism is mounted at one or both ends of the car and the mechanism is preferably operable from the platform upon which the motorman stands. In those cases where the car is to travel in both directions the mechanism would be preferably arranged at both ends of the car, although the mechanism at the forward end only would be in use.

Referring more particularly to the drawings 1 indicates the platform of the car, and 2 the dash-board to which is secured the curved brace members 3, said members having their lower end rigidly secured to the dash-board and their upper end secured to the horizontally disposed brace bars 4. The platform 1 is provided with a substantially circular opening 5 through which is disposed a vertical shaft 6, having its upper end bifurcated as shown at 7 and a ratchet lever 8 pivotally secured in the upper end of the shaft 6, said lever having one end pivotally mounted on a horizontally disposed shaft 9, which is mounted on the brace bars 4, and the other end of the lever is offset as shown at 10 and adapted to be disposed over one of the curved braces 3, said brace being provided with the notches 11 to hold the lever in an adjusted position.

Secured to the inside of the notched brace is a guide member 12 which is provided with the channels 13 adapted to receive the pointed guide members 14 formed integrally with the lever 8.

Secured to the lower end of the shaft 6 is a triangular shaped switch throwing shoe 15, which is provided with a point 16 at one end suitable to engage between the switch point and the rail to open the switch and the back end of the shoe 15 is wide enough to throw the switch well open. This shoe is provided with a vertically extending lug 17 onto which is fitted a cap 18 said cap being interiorly threaded as shown at 19 and secured to the lug 17 by means of the screw 20 and mounted on the lower end of the shaft 6. An elongated opening 21 is formed in the platform of the car adjacent the opening 5 through which is disposed a vertically arranged lever 22 having its lower end mounted on the connecting arm 23, said arm having a nut 24 threaded on one end to keep the lever from coming off, and the other end of said arm is rigidly secured to the lug 17 on the operating shoe so that when the lever 22 is operated the shoe is turned in one direction or the other whereby the point of the shoe will engage the switch point and throw the switch to the right or left according to the direction in which the shoe points. The lever 22 is pivotally mounted on the outwardly extending portion 25 of the T shaped arm 26 which is slidably mounted in the guide case 27, said arm having the transversely disposed lugs 28 formed integrally therewith which are adapted to engage the stops 29 on the lower end of the case to limit the downward movement of the lever 22.

Secured to the upper side of the platform and adjacent the opening 21 is a rack bar 30, adapted to be engaged by the ratchet 31 on the lever 22 to hold said lever in the desired position. The lever 22 is formed in two sections which are adjustably connected by means of the slot 22′ formed in the lower end of the upper section and a pin 23′ is carried by the upper end of the lower section and adapted to engage within said slot. A sleeve 24′ is carried by the upper section and adapted to encircle the connecting ends of said lever and make the connection more solid.

The shaft 6 is to be held in operative position by means of the brace rods 32 which are disposed upon each side of said shaft and secured thereto by means of the bolts 33, said braces having their other ends pivotally secured to the hanger 34.

From the foregoing description taken in connection with the drawings the operation of the mechanism will be readily understood taken in connection with the following: The lever 8 is adapted to raise the shoe 15 up and down to throw the same into and out of engagement with the switch points and the lever is adapted to turn said shoe from left to right to engage the switch points and throw them so that the car may leave the main track or continue thereon.

While I have shown and described the preferred construction of my invention it will be obvious that various changes in the details of construction and in the proportions may be resorted to for successfully carrying my invention into practice without sacrificing any of the novel features or departing from the scope thereof.

Having thus described this invention it is claimed:

1. In a device of the character described, the combination of a car platform having an opening formed therein, a vertical shaft disposed in said opening, a triangular shaped operating shoe secured to the lower end of said shaft, an operating lever secured to the upper end of said shaft to raise and lower the same to engage said shoe with the switch points, said platform having an elongated opening formed therein adjacent the first opening, a lever disposed through said opening, said lever being connected to the lower end of said shaft to rotate the same, and means for locking said lever in the desired position.

2. In a device of the character described, the combination of a vertically disposed shaft, a triangular shaped operating shoe secured to the lower end of said shaft, said shoe having an upwardly projecting lug formed integrally therewith, a cap disposed over the upper end of said lug, a screw secured in said cap and lug and said cap being threaded onto the lower end of said shaft, a lever secured to the upper end of said shaft to raise and lower the same and means for rotating said shoe from left to right to open and close the switch points.

3. In a device of the character described the combination of curved brace members, horizontally disposed brace bars secured to said members, notches formed on the curved surface of one of said members, a lever carrying a ratchet, which is adapted to engage in said notches, a channeled guide member secured on the inner side of said curved member, engaging points carried by said lever and adapted to engage in the channels of said guide, a vertical shaft having its upper end secured to said lever, a triangular operating shoe secured to the lower end of said shaft and means for rotating said shoe from left to right to open or close the switch points.

4. In a device of the character described, the combination of a vertical shaft, a triangular shaped operating shoe secured to the lower end thereof, a lever secured to the upper end of said shaft, an arm secured to

said shaft near the lower end thereof, a lever having its lower end secured to said arm, a guide case, a T shaped arm slidably mounted in said case upon which the second mentioned lever is mounted to rotate the operating shoe from left to right to open or close the switch points.

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

PAUL J. REIGER.

Witnesses:
H. N. GARRETT,
G. G. REIGER.