No. 844,762. PATENTED FEB. 19, 1907.

W. H. VAUGHN & J. E. TIFFANY.

SWITCH THROWING DEVICE.

APPLICATION FILED DEC. 31, 1906.

2 SHEETS—SHEET 1.

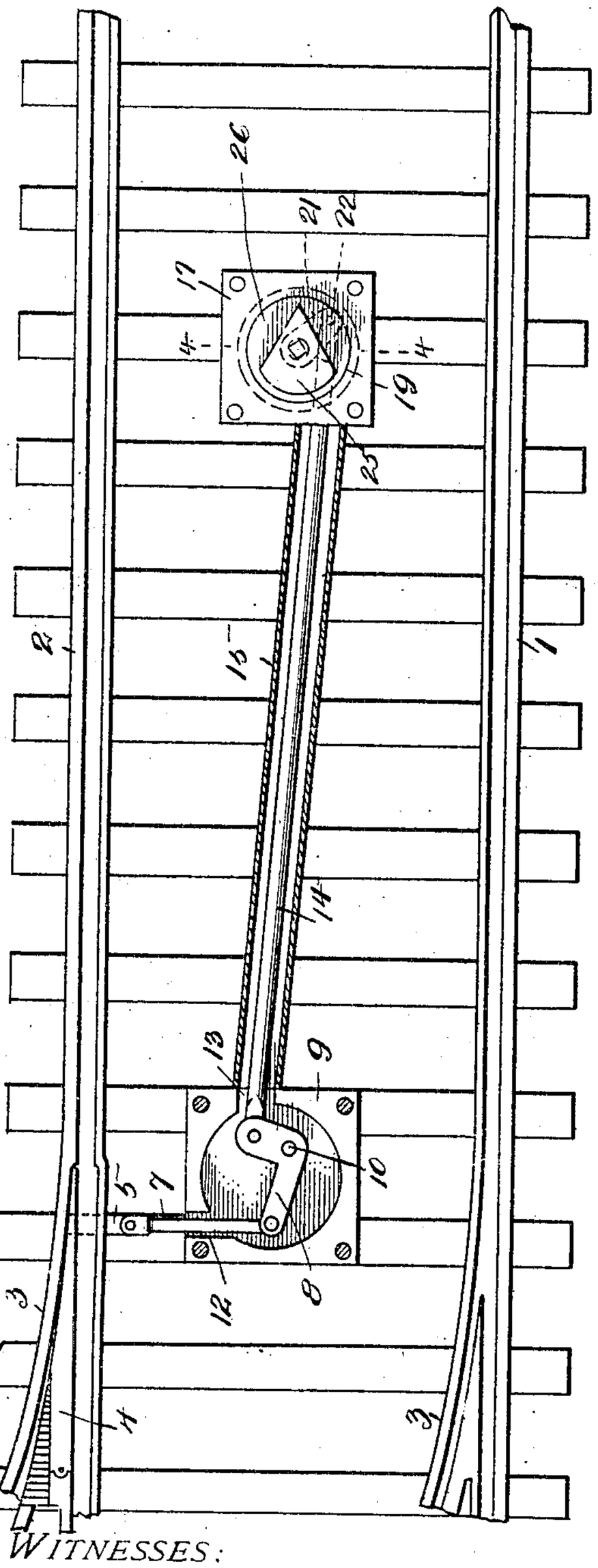

Fig. 1.

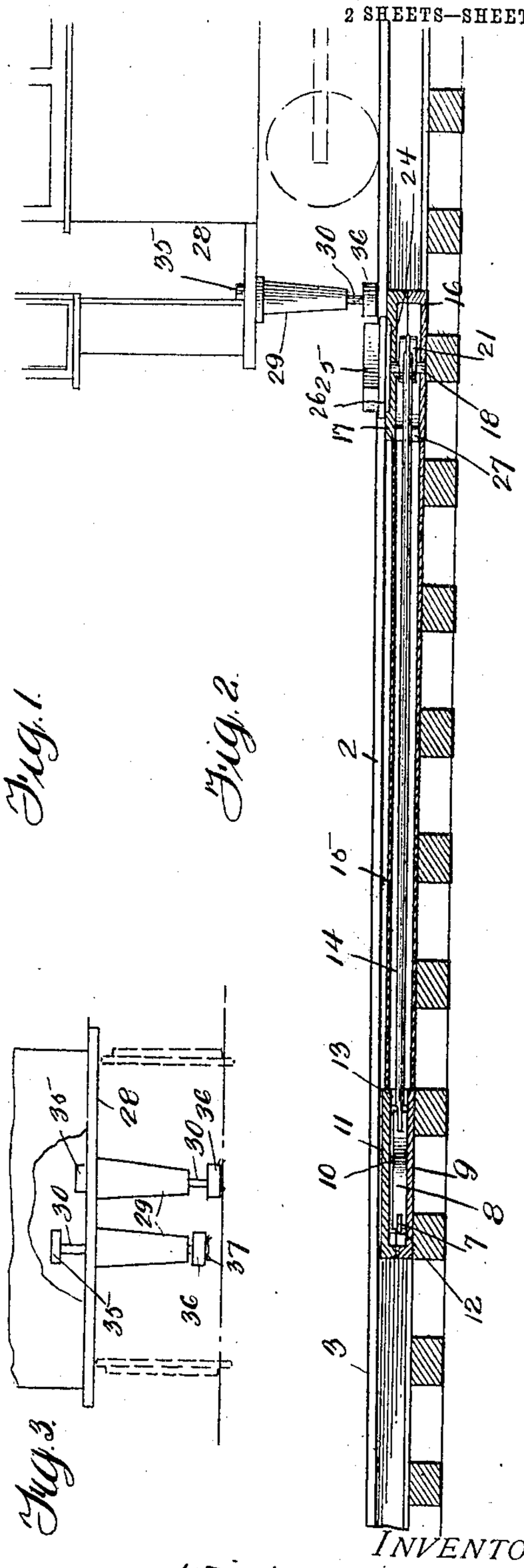

Fig. 2.

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 6

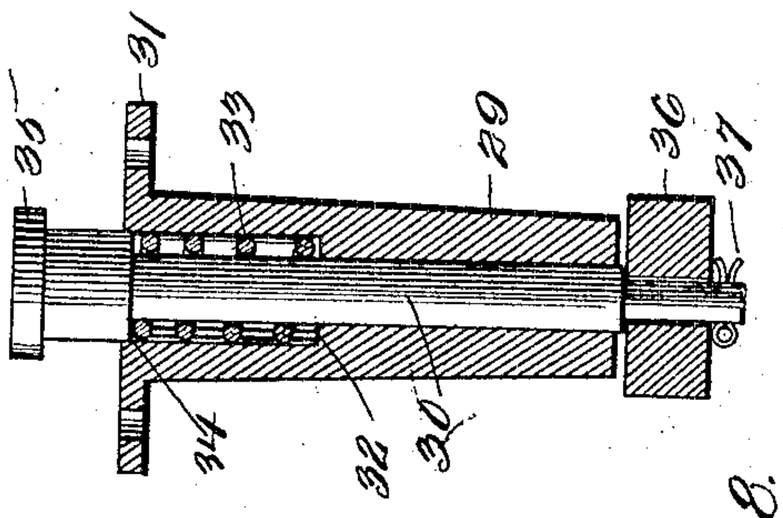


Fig. 8.

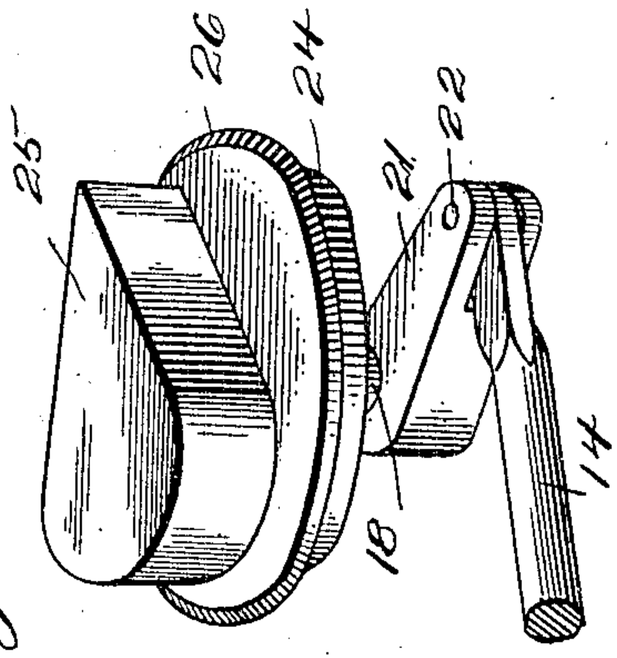


Fig. 4

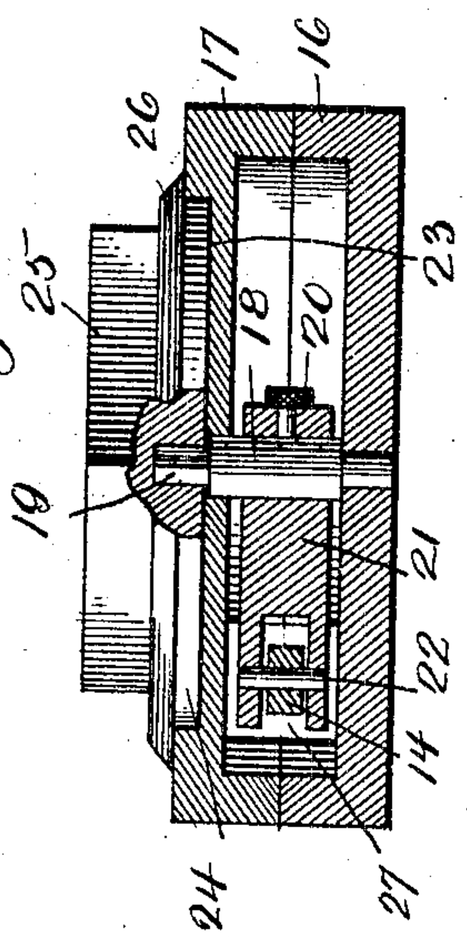


Fig. 7.

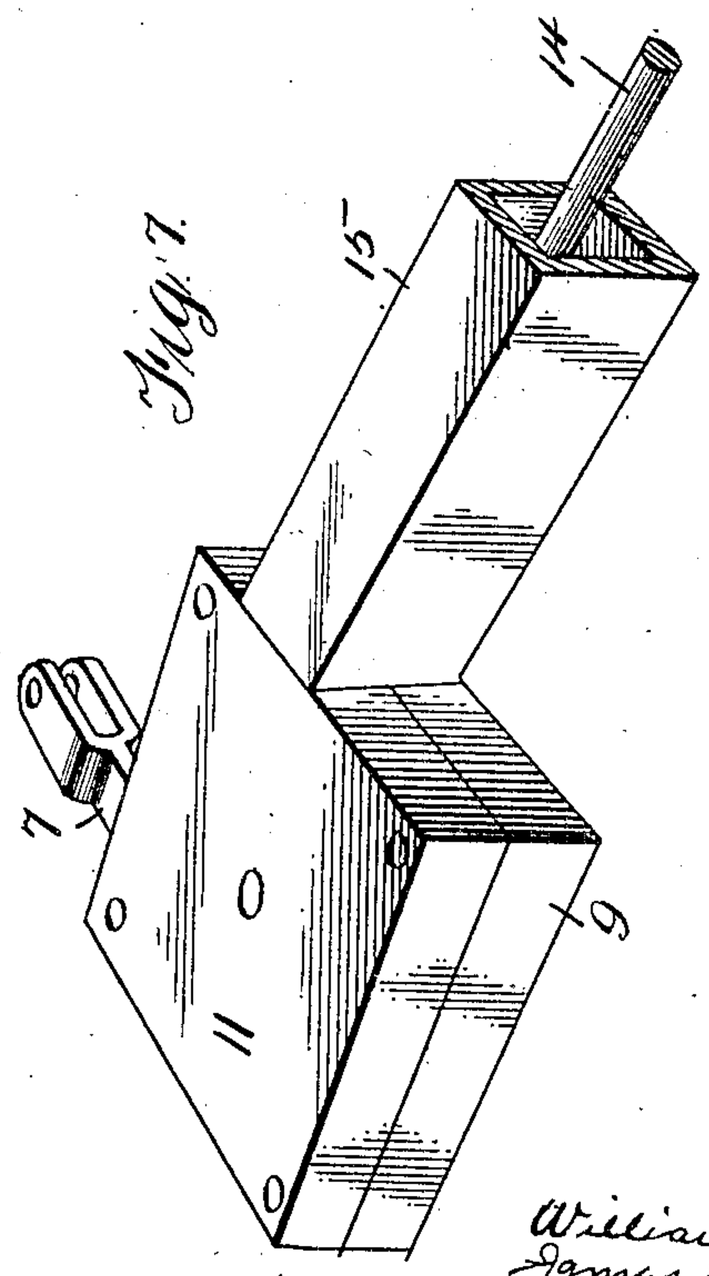
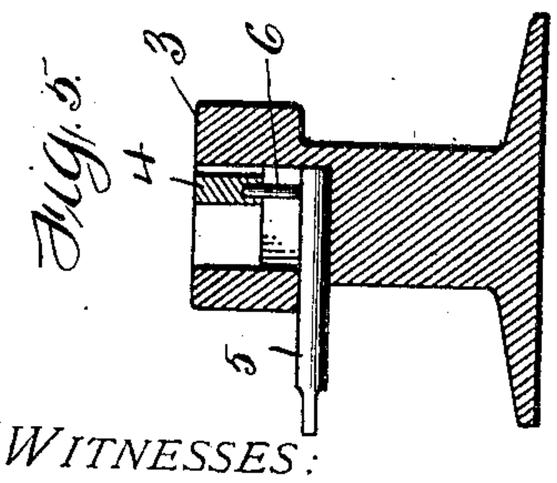


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. VAUGHN AND JAMES E. TIFFANY, OF JOHNSTOWN, PENNSYLVANIA.

SWITCH-THROWING DEVICE.

No. 844,762. Specification of Letters Patent. Patented Feb. 19, 1907.

Application filed December 31, 1906. Serial No. 350,178.

To all whom it may concern:

Be it known that we, WILLIAM H. VAUGHN and JAMES E. TIFFANY, citizens of the United States of America, residing at Johnstown, in the county of Cambria 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 drawings.

This invention relates to switch-throwing mechanism for street-railway tracks; and its primary object is to provide a switch-throwing device of novel construction adapted to be operated by means carried by a car.

A further object of the invention is to provide switch-throwing mechanism with an inclosing casing to protect it from the weather.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, which form part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a top plan view of the improvement applied to a railway-track, the casing being shown in section and one of the cover-plates being removed. Fig. 2 is a vertical sectional view showing parts in side elevation. Fig. 3 is a front elevation of a car-platform, partly broken away. Fig. 4 is a vertical section on the line 4 4 of Fig. 1. Fig. 5 is a transverse vertical section of the switch. Fig. 6 is a vertical section of one of the contact devices carried by the car. Fig. 7 is a view in perspective of a portion of the casing, and Fig. 8 is a detail perspective view of the oscillating disk and parts connected thereto.

The reference-numerals 1 and 2 designate the main rails of a track, and 3 the switch-rails. The pivoted switch-point 4 is connected by a rod 5 and pin 6 to one end of a bifurcated link 7, the opposite end of which is pivotally secured to one arm of a bell-crank lever 8. This lever 8 is mounted horizontally within a box 9 and secured by a pivot 10, said box being provided with a removable cover 11 and formed with a recess 12 for the passage of the link 6 and a recess 13 for the passage of a rod 14. The box 9 is connected by a casing 15 with another box 16, supported on one of the ties centrally between the rails 1 and 2. The casing 15 is preferably square in cross-section and serves to conceal and protect the rod 14. The box 16 is provided with a cover-plate 17 and mounted in bearings formed in the bottom of the box, and in the cover-plate is a vertical shaft 18, having a squared upper end 19 projecting above the cover-plate. Upon the shaft 18 is secured, by a set-screw 20 or other means, a crank-arm 21, bifurcated, as shown, for the attachment thereto of the adjacent end of the rod 14, the latter being secured by a pivot-pin 22. The upper surface of the cover-plate 17 is formed with a circular recess 23 to receive an oscillating disk 24, formed on its upper surface with a segmental projection 25. The disk 24 is provided with an annular flange 26, which overlaps the upper surface of the cover-plate, and said cover-plate and the wall of the box 16 are recessed at the point 27 for the passage of the rod 14.

From the car-platform 28 depend two sleeves 29, within each of which is supported a push-rod 30. The sleeves 29 are flanged at their upper ends 31 to adapt them to be secured to the car-platform, and the bore of each sleeve is circumferentially enlarged to provide an annular shoulder 32, upon which rests the lower end of a coil-spring 33. The upper end of this spring bears against an annular shoulder 34, formed below the head 35 of the push-rod, so that said spring retracts the push-rod when the latter is relieved of pressure. Upon the lower end of each of the push-rods below the sleeves 29 is mounted a roller 36, said rollers being adapted to strike against the oppositely-inclined sides of the segmental projection and secured by a cross-pin 37.

The utility and operation of the mechanism, constructed as thus described, is as follows: The position of the two spring-pressed push-rods with relation to the segmental projection 25 is such that the roller 36 of one of said rods is adapted to strike one side of the projection 25 when the rod 30 is depressed by the foot of the motorman, while the other roller 36 will strike the opposite side of said projection. The normal position of the rollers is above the level of the projection 25, so that when the switch is not to be operated the rollers will pass over the projection without striking it. It will be apparent that when one of the push-rods is depressed its roller will strike the projection 25, thus

moving the disk 24 and throwing the switch through the intermediacy of the shaft 18, crank-arm 21, rod 14, bell-crank 8, link 7, and rod 5. It will also be obvious that the switch may be opened or closed, the direction of movement of the switch depending upon which of the push-rods is depressed.

The working parts of the device are concealed and protected from the weather by the casing 15 and the cover-plates 11 and 17, and the mechanism, with the exception of the projection 25, is below the tread-surfaces of the rails.

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

1. A switch-throwing device comprising a box between the rails of a track, a horizontally-disposed bell-crank lever pivotally secured within said box and connected to the switch-point, a second box supported between the rails, a vertical shaft therein, a crank-arm on said shaft, a rod connecting said crank-arm and bell-crank lever, an oscillating disk on said shaft, an oppositely-beveled projection on said disk, and means carried on the car to contact with said projection.

2. A switch-throwing device comprising a box, between the rails of a track, a horizontally-disposed bell-crank lever pivotally secured within said box, and connected to the switch-point, a second box between the rails, a vertical shaft therein, a crank-arm on said shaft, a rod connecting said crank-arm and bell-crank lever, an oscillating disk on said shaft, a segmental projection on said disk, and two independent push-bars carried on the car adapted to strike opposite sides of said projection.

3. A switch-throwing device comprising a box between the rails of a track, a horizontally-disposed bell-crank lever pivotally secured within said box and connected to the switch-point, a second box between the rails, a casing connecting said boxes, a vertical shaft within said second box, a crank-arm on said shaft, a rod within said casing connecting said crank-arm and bell-crank lever, an oscillating disk on said shaft, a segmental projection on said disk, and two spring-pressed push-rods carried on the car carrying contact-rollers adapted to strike opposite sides of said projection.

In testimony whereof we affix our signatures in the presence of two witnesses.

WILLIAM H. VAUGHN.
JAMES E. TIFFANY.

Witnesses:
BEN GRIFFITH,
EMLYN JONES.