

UNITED STATES PATENT OFFICE.

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SWITCH-THROWING MECHANISM.

No. 812,581.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY O. MARQUIS, a citizen of the United States of America, residing at Superior, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Throwing Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switch-throwing devices; and the invention relates more particularly to a novel device adapted to be carried by an electrically-operated car for throwing the switches of railways upon which the car travels.

The primary object of this invention is to provide positive and reliable means for effecting the throwing or movement of a switch-tongue, the same being accomplished by the operator of a car without necessitating his leaving the car to accomplish the same. To this end I mount between the rails of a track mechanism which when actuated will move the switch-tongue in either direction desired, said mechanism being actuated by a depending bar carried by the car traveling upon said track, said bar being moved to engage the mechanism to throw the switch-tongue in the desired direction.

The mechanism which I employ is entirely independent of any electrical connections of a railway-track, and the simplicity of construction permits of the mechanism, together with its appurtenant parts, being manufactured at a comparatively small expense.

The detail construction of the device will be hereinafter more fully described and then claimed, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a fragmentary side elevation of a car and a section of road equipped with my improved device. Fig. 2 is a perspective view of a portion of the track constructed in accordance with my invention. Fig. 3 is a bottom plan of the same. Fig. 4 is a perspective view of an eccentric used in connection with the device. Fig. 5 is a longitudinal sectional view of the device taken on the line *x x* of Fig. 3, a portion of the mechanism being removed. Fig. 6 is a plan of an actuating-bar carried by a car, and Fig. 7 is a detail view of the lower end of a plunger used in connection with the device.

In the accompanying drawings, the reference-numeral 1 designates a conventional form of street-car, and 2 a track upon which the car is adapted to travel.

My invention resides in providing the platform 3 of a car with a pivotally-mounted hook-shaped bar 4, said bar being normally retained in an elevated position by a coiled spring 5. In the platform 3 of the car is mounted a headed plunger 6, which passes through an opening 7, formed in the platform, said opening permitting of the lower end of the plunger being adjustably secured in a slot 8, formed adjacent to the pivoted end 9 of the bar 4. The lower end of the plunger is provided with a T-shaped head 10, which is passed through the slot 8 and then rotated a quarter of a revolution to engage the bar 4.

In connection with the track 2 I employ an oblong casing 11, said casing being mounted between the rails 12 12 of the track. The top 14 of the casing is formed with two countersunk recesses 15 and 16, having inclined ends 17 17. The side wall of the recess 16 is provided with an opening 18, while the opposite side wall of the recess 15 is provided with an opening 19. The casing at its one end carries a pivoted switch-tongue 20, which controls the right of way of the main track and the siding track. The top of the casing 14 directly beneath the switch-tongue is provided with a transverse slot 22, and within the casing I mount the mechanism for actuating the switch-tongue 20 when the end of the bar 4, carried by a car, extends downwardly in either one of the recesses 15 or 16.

The end of the casing 11 adjacent to the switch-tongue 20 is provided with a bracket 23, while another depending bracket 24 is carried by the casing adjacent to the opening 18 of the recess 16, and still another bracket 25 is carried by the casing adjacent to the opening 19 of the recess 15. Between the bracket 23 and the top 14 of the casing is pivotally mounted a segment-shaped block 26, and pivotally connected to said block, as at 27, is an arm 28, which extends outwardly toward the slot 22 of the casing 11. The outer end of the arm 28 is connected to the switch-tongue by a pin 29, which extends through the slot 22 of the casing.

The one edge of the block 26 is connected by a link 30 with an eccentric 31, revolvably mounted in the bracket 24 of the casing. The link is pivotally connected to the eccentric at one edge thereof, the pin 32, which connects

said link to the eccentric, serving functionally as a crank-pin. The periphery of the eccentric is cut away, forming a shoulder 33, and at one position of the eccentric the shoulder is adapted to protrude through the opening 18 of the recess 16, whereby said eccentric may be engaged by the bar 4, carried by the car. In the bracket 25 of the casing is mounted another eccentric 34, having a shoulder 35. The eccentric is pivotally connected by a rod 36 with the opposite side of the segment-shaped block 26, as clearly illustrated in Fig. 3 of the drawings.

In the manner in which I have pivotally connected the eccentrics 31 and 34 to the block 26 one of the shoulders 33 or 35 of said eccentrics will always protrude into one of the recesses 15 or 16, and when the bar 4 is depressed by the operator of the car the end of said bar is adapted to engage one of the eccentrics. In the position shown in Fig. 2 of the drawings the switch-tongue 20 is closed to allow the car 1 to pass upon the siding 21. Should it be desired to continue upon the track 2, the operator of the car lowers the bar 4 to engage the shoulder 35 of the eccentric 34, and as the end of the bar 4 rides down the inclined end 17 of the recess 15 it engages the shoulder 35 of the eccentric 34 and through the medium of the rod 36 partially rotates the block 26, which through the medium of the arm 28 throws the switch-tongue 20. After the bar 4 has engaged the eccentric 34 the spring 5 of said bar will return it to its normal position, thereby preventing it from engaging the shoulder of the eccentric 31, which by the withdrawal of the eccentric 34 from the recess 15 has moved the eccentric 31 into the recess 16. The next car passing over the track 2 can pass upon the siding 21 by throwing its bar 4 into the recess 16 to engage the eccentric 31, which through the medium of the rod 36 will partially rotate the block 26 and move the switch-tongue into the position shown in Fig. 2 of the drawings.

From the foregoing description it will be

observed that I have devised a novel form of switch-throwing device which is extremely simple in construction and free from all danger of being injured by constant use.

I preferably construct the casing of strong and durable metal, also the mechanism contained within said casing, and such changes in the construction and operation of my improved device as are permissible by the appended claims 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 car, a track, a switch-tongue, and a spring-retained hook-shaped bar carried by said car and actuated by the operator of said car, of a casing mounted in said track and having recesses formed in its upper face, eccentrics mounted within said casing adjacent to said recesses and adapted to protrude therein, a block pivotally mounted in said casing and connected with said switch-tongue, means actuated by the bar of said car to move said switch-tongue, substantially as described.

2. The combination with a car, a track and a switch-tongue, of a spring-held hook-shaped bar carried by said car and actuated by the operator thereof, a casing mounted in said track and having recesses formed therein, eccentrics mounted in said casing and protruding into said recesses, a block pivotally mounted in said casing and connected to said switch-tongue and links connecting the opposite ends of said block with said eccentrics, said block being actuated by said bar contacting with said eccentrics to move said switch-tongue, substantially as described.

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

HENRY O. MARQUIS.

Witnesses:

W. F. WEGLEY,
J. M. TRUXAL.