No. 889,785. PATENTED JUNE 2, 1908.

W. A. JONES.

SWITCH THROWING DEVICE FOR STREET RAILWAY CARS.

APPLICATION FILED JAN. 24, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

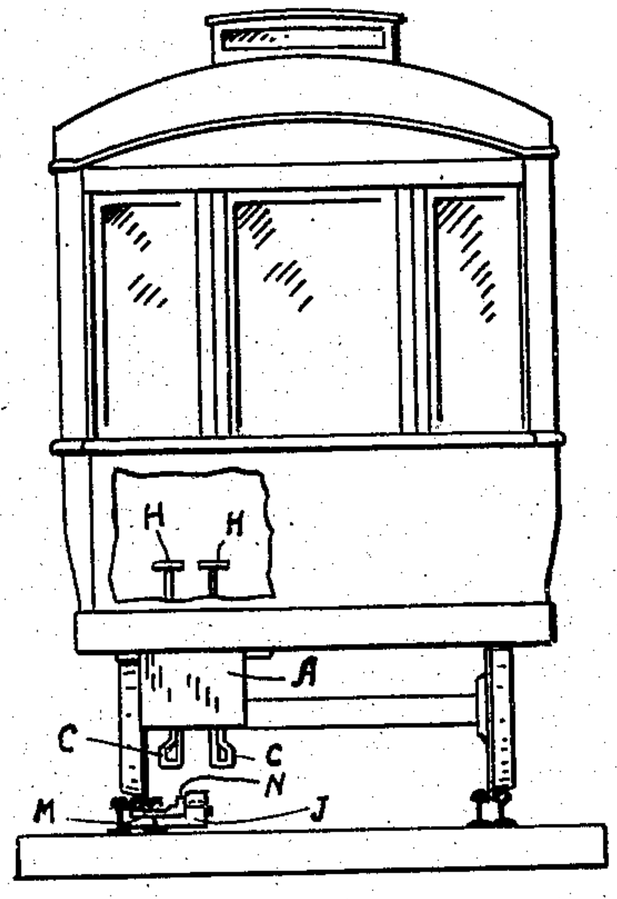


Fig. 3.

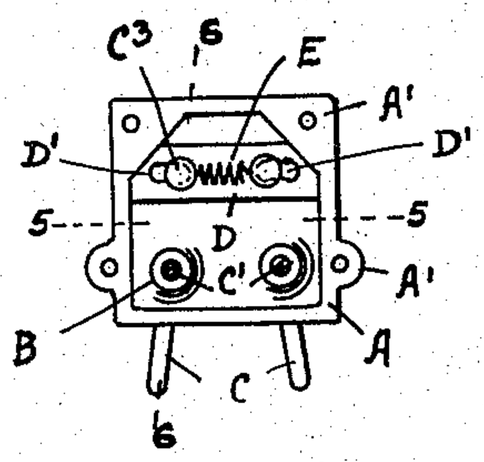


Fig. 6.

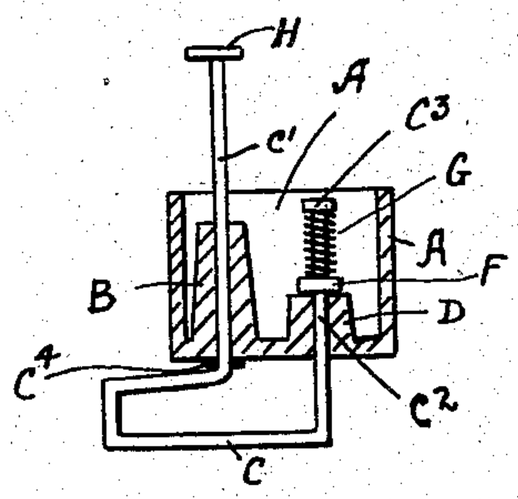


Fig. 4.

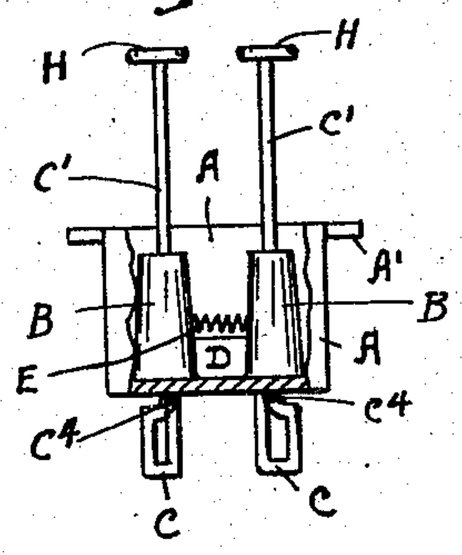


Fig. 2.

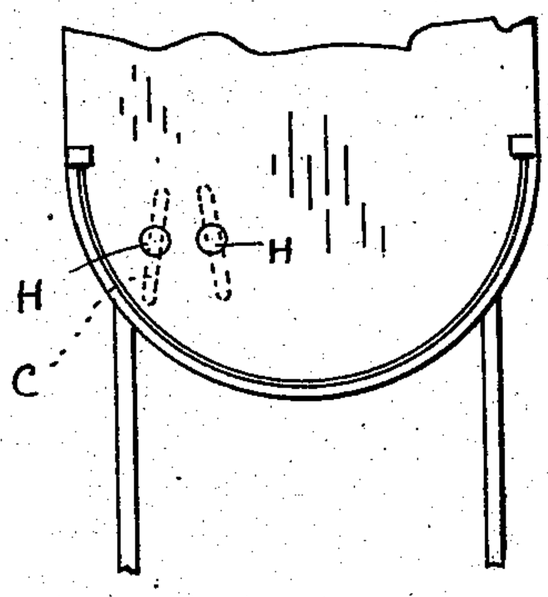
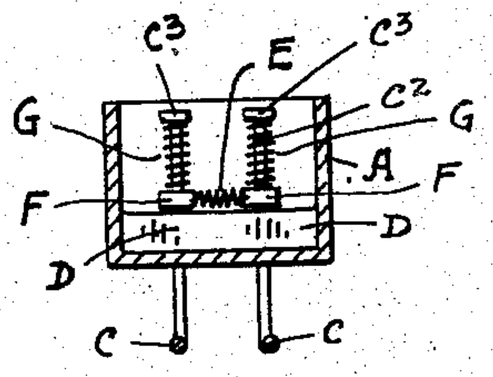


Fig. 5.



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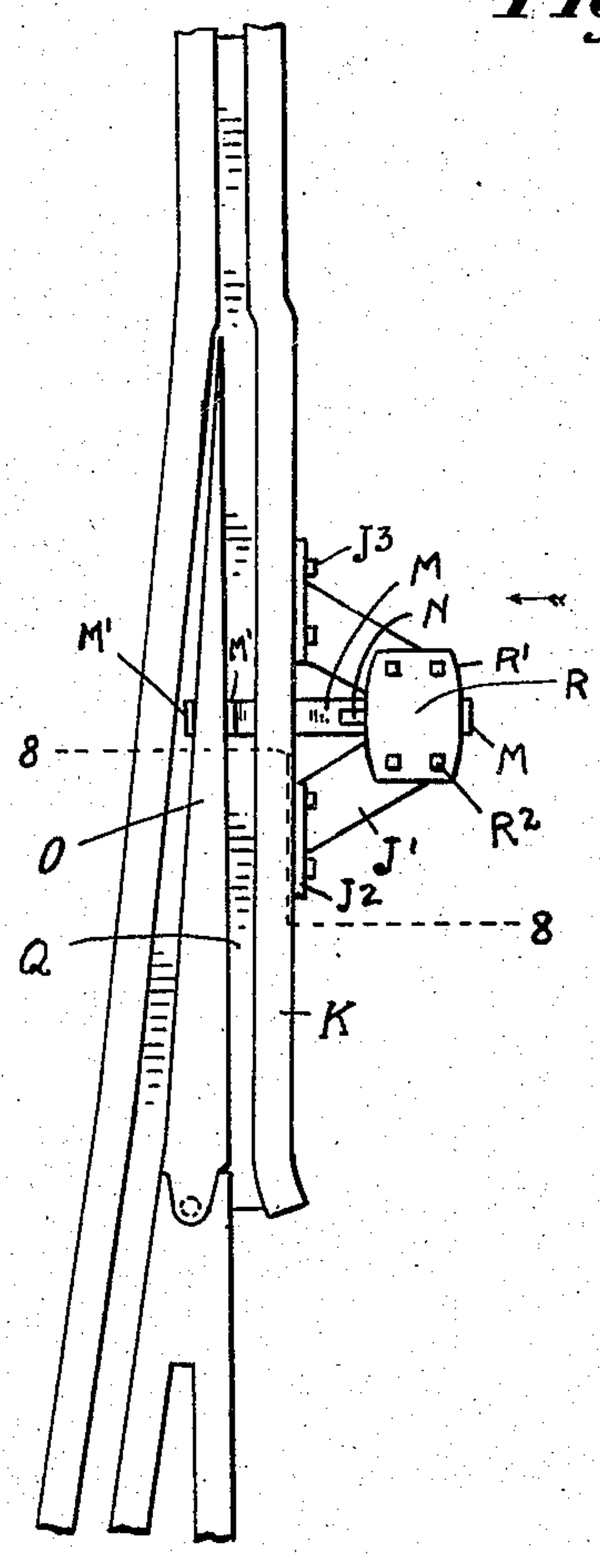
2 SHEETS—SHEET 2.

Fig. 7.



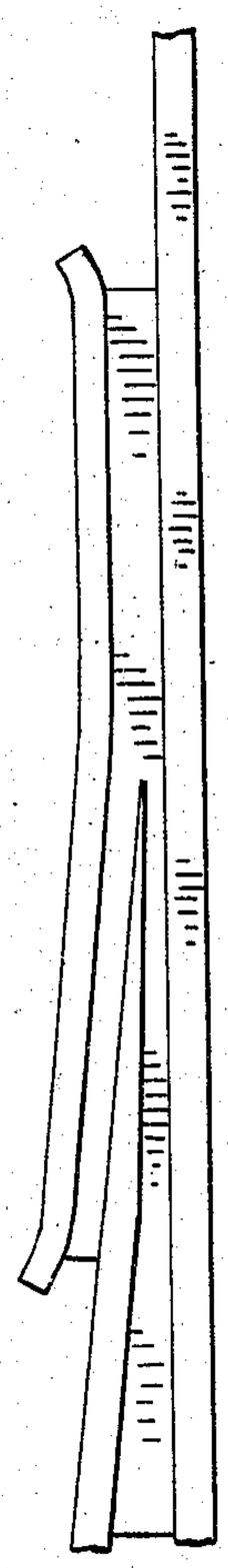


Fig. 8.

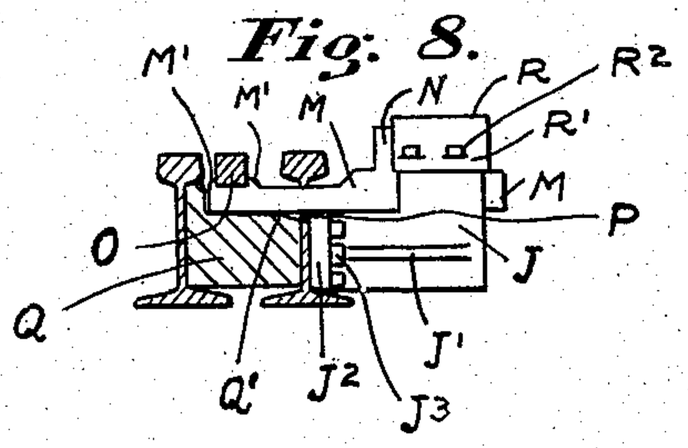
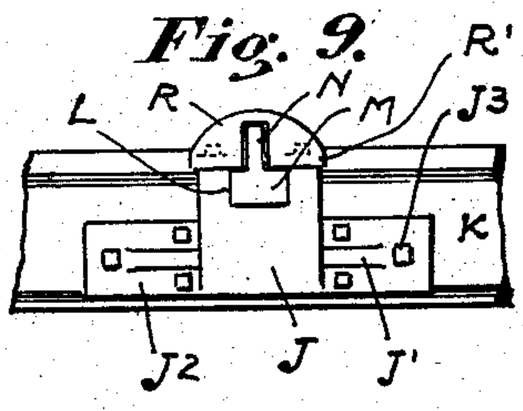


Fig. 9.



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UNITED STATES PATENT OFFICE.

WILLIAM A. JONES, OF MUNCIE, INDIANA, ASSIGNOR OF TWO-THIRDS TO GEORGE R. JONES AND WILLIAM D. WEBSTER, OF MUNCIE, INDIANA.

SWITCH-THROWING DEVICE FOR STREET-RAILWAY CARS.

No. 889,785. Specification of Letters Patent. Patented June 2, 1908.

Application filed January 24, 1908. Serial No. 412,519.

To all whom it may concern:

Be it known that I, WILLIAM A. JONES, a citizen of the United States, residing at the city of Muncie, county of Delaware, and State of Indiana, have invented a new and useful Switch-Throwing Device for Street-Railway Cars, of which the following is a specification.

Objects of this invention are to provide reliable means whereby the point-rail of the switch may be shifted as the car approaches the same, without the necessity of stopping the advance of the car, or the leaving of the car platform by the operative of the car.

To that end my invention consists essentially of a device adapted to be connected to the platform of the car and arranged to be operated by the foot of the operative, and means connected to the point-rail of the switch to be engaged by the said device, whereby as the car approaches the switch, the point-rail will be shifted.

A desirable form of device embodying my invention is described herein and illustrated in the accompanying drawings.

Minor changes may be made in the construction and arrangement of the parts thereof without affecting the nature or principle of my invention.

Similar characters of reference refer to like parts throughout the several views, in which—

Figure 1 is a front view of a car and a sectional view of the track equipped with my invention, a portion of the fender-plate of the car-platform being broken away. Fig. 2 is a plan view of the car-platform the remainder of the car being not shown. Fig. 3 is a plan view of the shift-bar frame removed, the plunger end of the shift-bars being shown in section. Fig. 4 is a front view of the shift-bar frame removed, and its parts, the frontal wall being partially broken away. Fig. 5 is a transverse vertical sectional view of the shift-bar frame on the line 5—5 Fig. 3, and Fig. 6 is a vertical central longitudinal view thereof on the line 6—6 Fig. 3. Fig. 7 is a plan view showing a railway switch equipped with my invention. Fig. 8 is a transverse sectional view on the line 8—8 Fig. 7. Fig. 9 is a side view of the switch-bar frame and a portion of the track-rail as seen in the direction indicated by the arrow in Fig. 7.

A designates a box-shaped frame having the flanges A^1 through which suitable bolts are passed to secure this frame to the underside of the platform of the car. This frame is preferably made of cast-iron and is of such form as to support the housings B each of which has a vertical perforation in which are slidingly retained the plunger-ends C^1 of the shift bars C hereinafter to be referred to.

D designates a housing disposed at the rear and of a height less than that of the housings B, and provided with the pair of vertical perforations D^1 that are curvilinear and elongated transversely as shown in Fig. 3. In these perforations D^1 slidingly reside the spring-ends C^2 of the shift-bars C.

The shift-bar C is made of bar metal of substantial area in cross section and is bent so as to extend forward of the housings B, the plunger-ends C^1 reside slidingly in the housings B and the spring-ends C^2 which extend upwardly and parallel to C^1, reside slidingly in the perforations D^1 of the housing D.

C^4 designates a stop-bar suitably positioned on each of the plunger-ends and beneath the frame A as plainly shown in Fig. 6.

The spring-ends C^2 are normally strained toward each other and against the interior ends of the slots D^1, by a strong coil spring E the ends of which are secured to the rings F fitted loosely on the spring-ends C^2 and adapted to rest on the housing D. Thus the forward ends of the shift-bars are sustained in the angular position with reference to the car and the track, as shown in Fig. 2 and Fig. 3.

G designate coil-springs having their lower ends resting upon the rings F and their upper ends against the underside of the head C^3 that is secured on the spring-end C^2, whereby the spring-ends C^2 are normally strained upwardly. Upon each of the plunger-ends C^1 is the foot-plate H that reposes above the floor line of the car-platform the function of which foot-plate is obvious, and will be presently referred to. The switch-bar frame J has the integrally formed legs J^1 widened into the feet J^2 that are secured to the web of the guard-rail K by the suitable bolts J^3.

L designates a guide-way provided in the switch-bar frame, in which guide-way is slidingly seated the slide-bar M having the upwardly extended lug N^1 on that end which resides in the guide-way. On the other end of this slide-bar are the lugs M^1 spaced such distance apart as to let the

point-rail O rest between them, as plainly shown in Fig. 7 and Fig. 8. In the installation of this part of my invention just described in readiness for use, a proper opening P is cut through the web of the rail K and a slot Q^1 is chiseled in the filler Q, so that the slide-bar M may be inserted into position. The slide-bar M then retains engagement with the point-rail O so that when moved the point-rail will also be moved accordingly.

R designates a crown-plate having the flanges R^1 to rest on the switch-bar frame J and secured thereto by the bolts R^2. The top of this crown-plate is rounded so that vehicle wheels may pass easily thereover, and whereby a protective guide-way for the lug N is provided. In this form of construction adopted the protrusion upward above the face of the track-rail is not considerable.

As the car approaches the switch the motorman will observe the location of the point-rail with reference to the rails; if it is in the position as shown in Fig. 7 and it is desired that the car shall take the side-track, the right-hand foot-plate H is pressed and the shift-bar C caused to descend to its lowermost position and opposite the lug N. As soon as the shift-bar comes into engagement with the lug N the latter will be moved immediately causing the point-rail O to be shifted; the car will then enter the side track. Undue strain cannot be imposed upon the engaging parts or upon the rail because the spring E will permit the shift-bar to yield sufficiently to pass without undue friction. Coincident with the release of the pressure on the foot-plate the spring G will raise the shift-bar to the normal inoperative position as shown in the drawings. As the next car approaches and it is desired to use the main line, then the left-hand foot-plate is operated and in the advance of the car as the switch-bar engages the lug N the point-rail O will be immediately shifted back to the position as shown in Fig. 7, so that the car will take the main line.

In the application to use of my invention it is contemplated that both the front and rear ends of the car shall be fitted therewith so that the invention may be operated by the car as it moves either forward or rearwardly.

What I claim as my invention and desire to secure by Letters Patent of the United States, is—

1. A switch-throwing device of the kind described comprising a frame adapted to be secured on the underside of the car-platform, a pair of shift-bars having forwardly extending ends disposed at an angle to each other each of said shift-bars having a forward upright provided with a foot-plate, and having also a rear upright, the former being supported pivotally and slidingly and the latter being vertically and transversely movable in the said frame, a spring to yieldingly strain each of said shift-bars upwardly, and a spring to strain the rear ends of said shift-bars toward each other, a slide-bar seated in a frame located between the track-rails to engage the point-rail, and having a lug thereon to be engaged by said shift-bars, substantially as described.

2. A switch-throwing device of the kind described, comprising a frame adapted to be secured to the underside of the car-platform and having vertical forward and rear housings therein, a pair of shift-bars having forwardly extending ends disposed at an angle to each other each of said shift-bars having a forward upright provided with a foot-plate and having also a rear upright, the former being supported pivotally and slidingly in the said forward housing, and the latter, each having a head thereon, and being vertically and transversely movable in curvilinear slots provided in the rear housing, a loose-fitting ring engaged by each of said rear uprights, the said rings being connected together by a spring, and a coil-spring around each of said rear uprights having its end to bear against the loose-fitting ring and the underside of said head, a slide-bar having connection with the point-rail and seated in a frame rigidly secured between the track-rails, and having an upwardly extended lug thereon to be engaged by the said shift-bars, substantially as described.

3. In switch-throwing devices of the kind described a slide-bar equipment for the point-rail, consisting of a bar having lugs thereon to engage the lateral edges of the point-rail said bar being adapted to pass through a suitable perforation and recess provided therefor in the web and the filler of the adjacent track-rail, and having an upwardly extending lug on its free end, a frame adapted to be connected to the track-rail and provided with a guide-way therein for said slide-bar, and having a detachable hood thereon that partially covers said slide-bar, substantially as described.

In witness whereof I sign my name to this specification in the presence of two subscribing witnesses.

WILLIAM A. JONES.

Witnesses:
THOMAS L. RYAN,
ETHEL L. LISTER.