No. 862,803. PATENTED AUG. 6, 1907.

T. J. BURKE.

RAILWAY SWITCH.

APPLICATION FILED APR. 10, 1905. RENEWED JAN. 29, 1907.

3 SHEETS—SHEET 1.

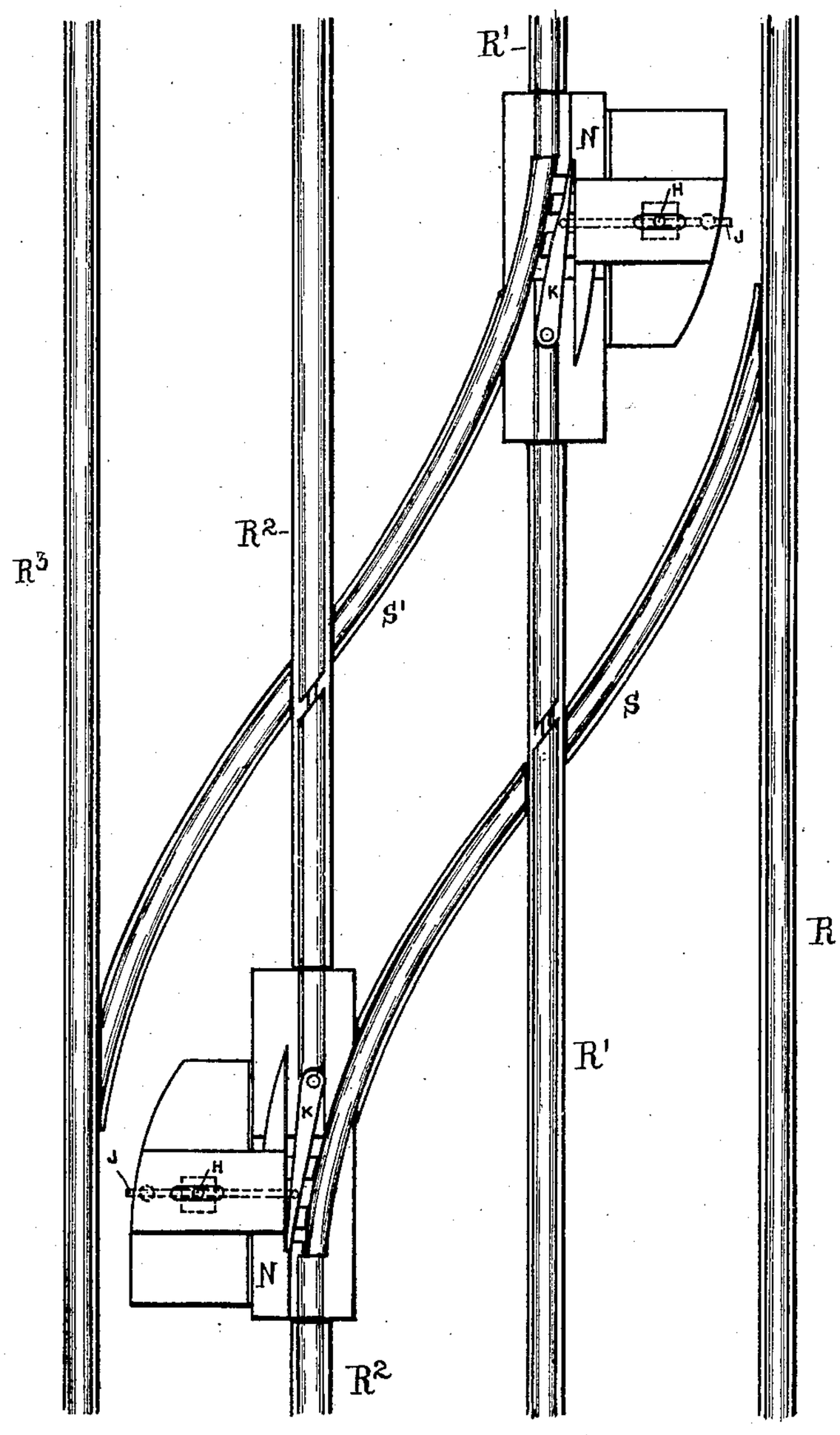

FIG. 1.

Witnesses
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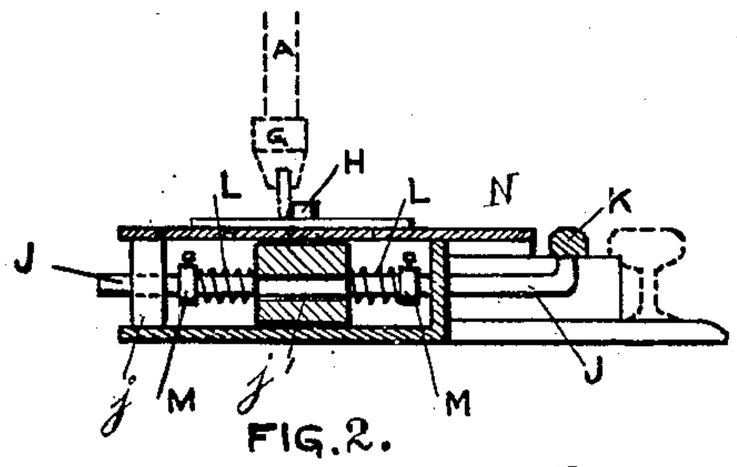

FIG. 2.

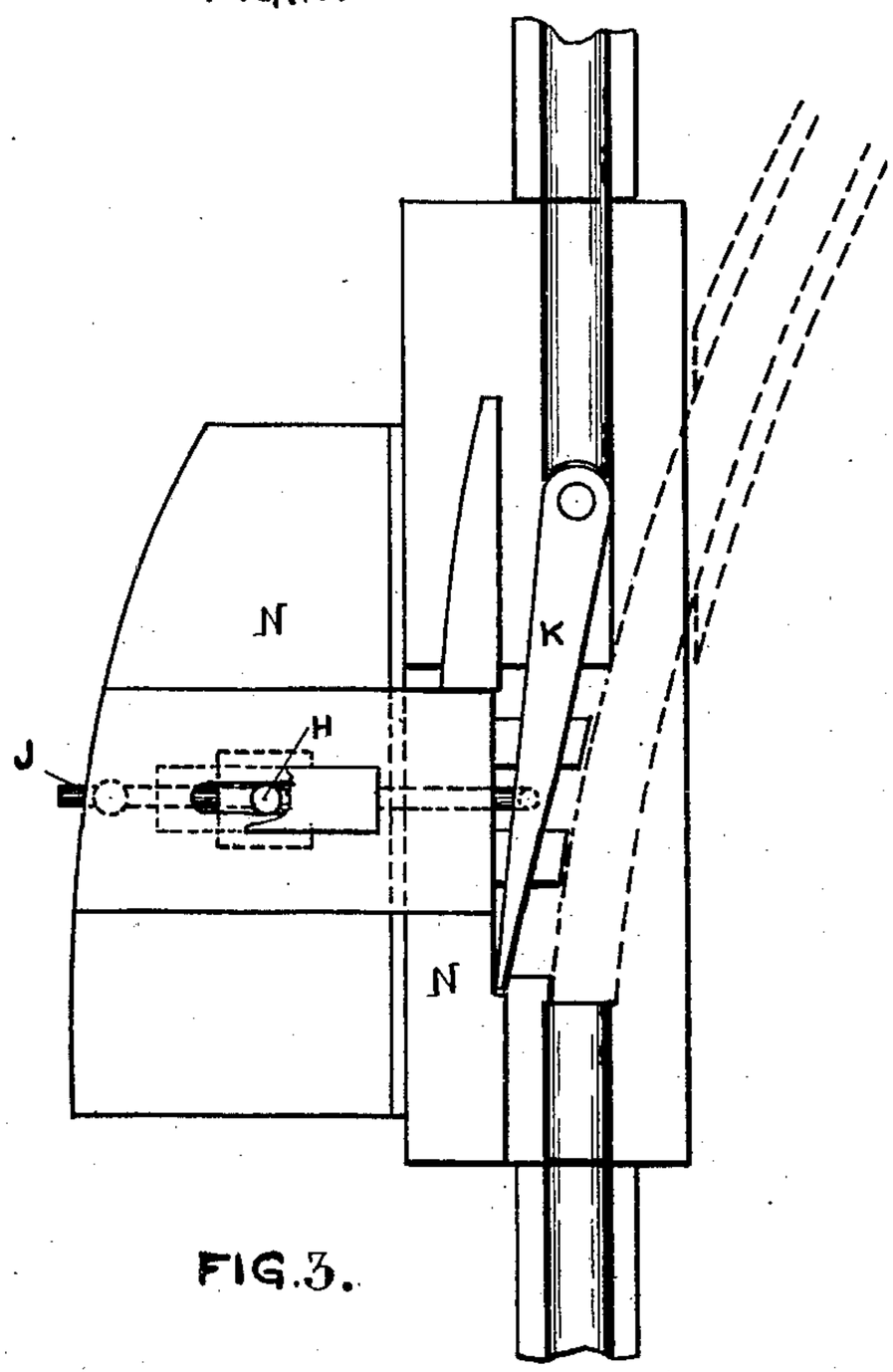

FIG. 3.

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3 SHEETS—SHEET 3.

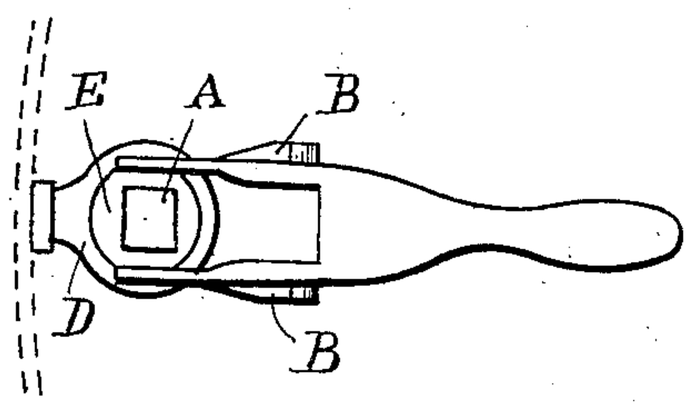

FIG. 4.

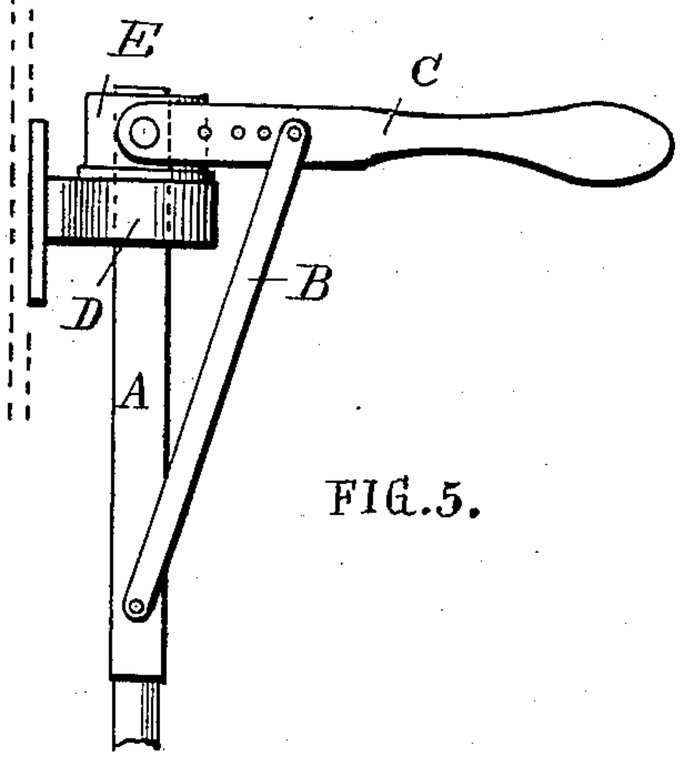

FIG. 5.

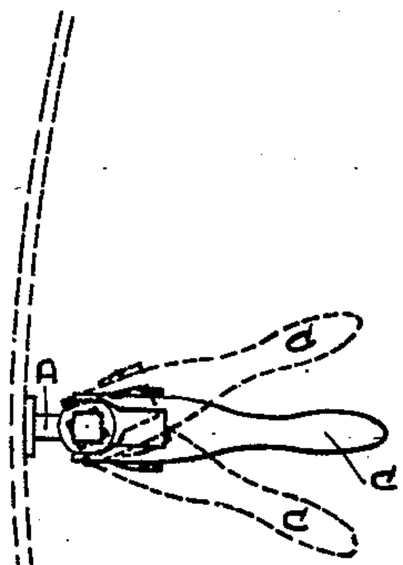

FIG. 6.

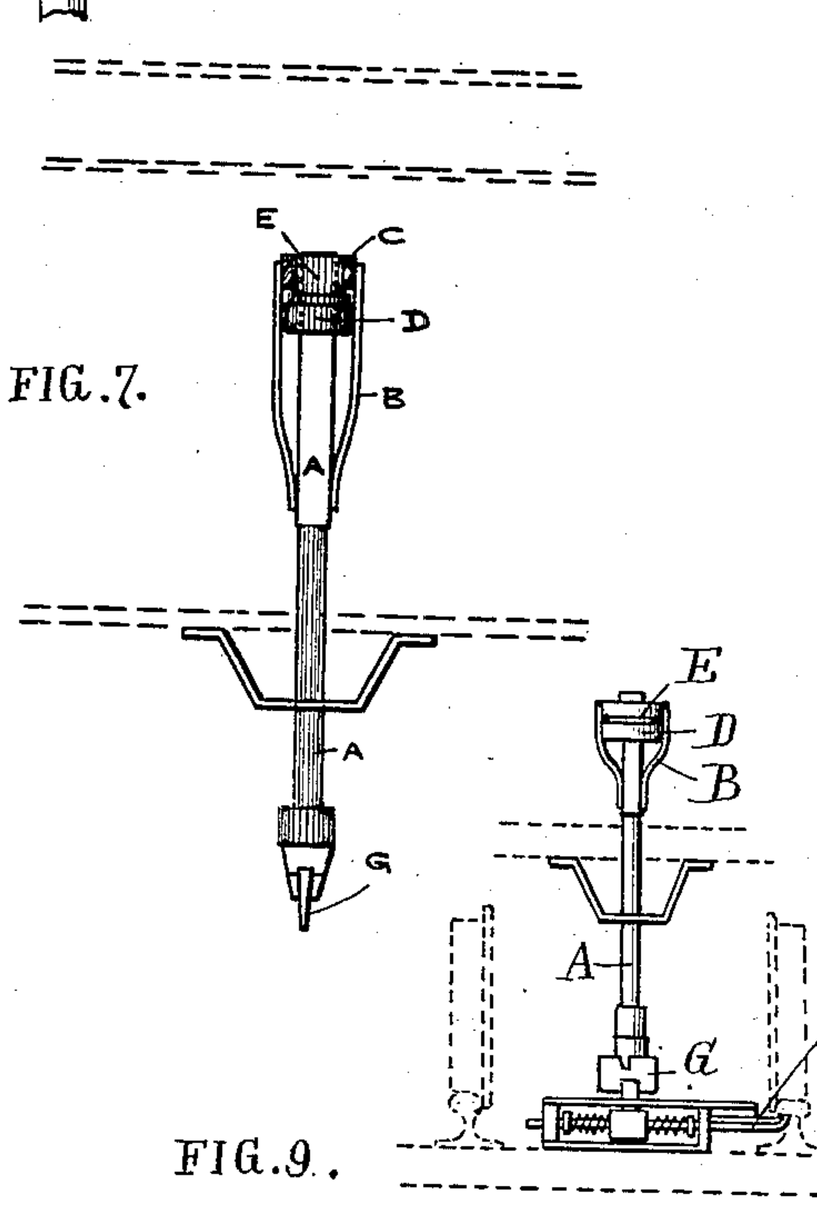

FIG. 7.

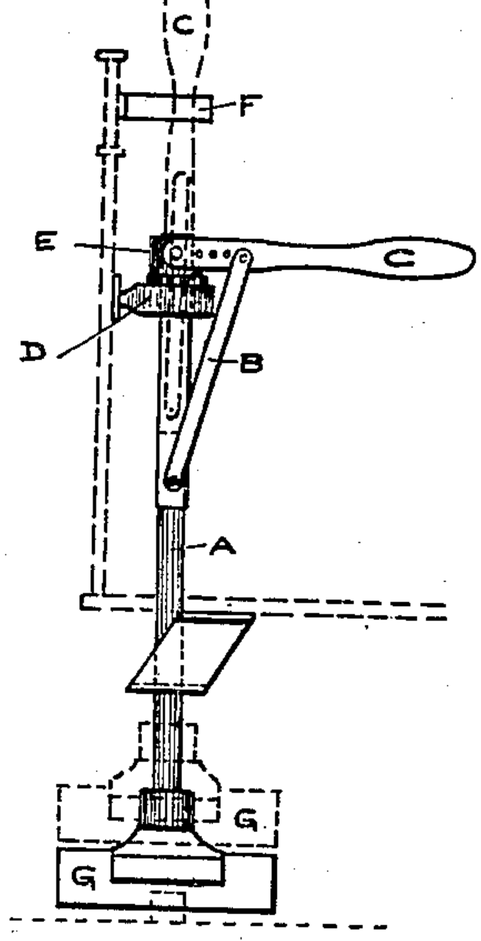

FIG. 8.

FIG. 9.

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UNITED STATES PATENT OFFICE.

THOMAS J. BURKE, OF NEW ORLEANS, LOUISIANA.

RAILWAY-SWITCH.

No. 862,803. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed April 10, 1905, Serial No. 254,862. Renewed January 29, 1907. Serial No. 354,746.

To all whom it may concern:

Be it known that I, THOMAS J. BURKE, a citizen of the United States, and a resident of New Orleans, in the parish of Orleans and State of Louisiana, have invented an Improved Railway-Switch, of which the following is a specification.

My invention is an improvement in that class of street railway switches which are adapted to be operated by a device attached to and controlled from the platform of a car.

The construction, arrangement and combination of parts constituting my invention are as hereinafter described and illustrated in the accompanying drawings, in which

Figure 1 is a plan view of two lines of track connected by switch rails together with my improved switch mechanism. Fig. 2 is a vertical section illustrating the arrangement of parts constituting the switch mechanism proper. Fig. 3 is an enlarged plan view of the parts shown in Fig. 1. Fig. 4 is a plan view of the switch-shifting device applied to the platform of a car. Fig. 5 is a side view of the parts shown in Fig. 4. Fig. 6 is a plan view illustrating different positions of the hand lever constituting part of the mechanism on a car platform. Fig. 7 is an enlarged front view and partly sectional view of the mechanism applied to a car platform. Fig. 8 is a side view of the same which also illustrates the raised and lowered position of the said mechanism. Fig. 9 is a front view illustrating the operation of the switch-shifting mechanism on the switch proper.

In Fig. 1 R, R′, R^2, R^3, indicate two parallel lines of main track, and S, S′, curved switch rails connecting the same. At the junction of the switch rail S with the main rail R^2 and of the switch rail S′ with the main rail R′, I apply a pivoted switch point K and mechanism, which, when properly acted upon by the device attached to a car platform, will shift said point K laterally to close the switch. The switch points K are shown in Fig. 1 in such position that the switch is open at both ends. They are pivoted in line with the main rails R′ and R^2, and are held thrown laterally out of line with the adjacent portion of such main rails and in contact with the fixed portion of the frog N. At a point not far from the tapered end of the switch points K is attached a horizontal bar J, shown in Fig. 2, the same extending through suitable bearings or guides *j* arranged parallel in the frog N. Intermediate of the parts *j* the rod J passes through and is adapted to slide in a block *j′* which is provided with a lug H that projects up through a slot in plate N. It is with this lug H that the device attached to the platform of a car is adapted for contact, for the purpose of shifting the switch points K, as will be hereinafter described. Between the block J and the adjacent fixed bearings *j* spiral springs L and clamping collars M are applied to the rod J. Since the springs L are interposed between the shiftable collars M and the movable central block *j′*, it is apparent that, when the block *j′* is moved laterally one spring or the other will be pressed and that the pressure will be in turn transferred to the switch points K, thus opening or closing them as the case may be.

As will be understood by reference to Figs. 4 to 9, the means for shifting the switch points K comprises a vertical rod or shaft A which is provided at its lower end with a horizontal plate G, and adapted to slide vertically and rotate in suitable guides, or brackets, D, fixed on the platform of a car, and a hand lever C that is pivoted at one end to a collar E in which the said shaft A is adapted to slide, and side bars B which connect the said lever with the shaft A and serve to raise the same when required.

In further explanation of details, I will state that the lower end of the shaft A is provided with an enlarged head having a horizontal slot in which the elongated rectangular plate G is secured. The collar E rests and is adapted to rotate upon the fixed bracket D, and the upper portion of the shaft A is squared or polygonal, so that, while adapted to slide vertically in the collar E, they rotate together. The hand lever C is provided near its inner end with a row of holes which permit the attachment of the upper ends of the bars B so they may be shifted as required to adapt them to raise the shaft A higher or lower as conditions require.

From the foregoing description it will now be apparent that when a car provided with the mechanism illustrated in Figs. 4 to 9 approaches the switch and it is desired to continue on the main track, the switch being open the operator on the front platform of the car seizes the lever C and brings it from the vertical position, indicated by dotted lines in Fig. 8, down to the horizontal position, indicated by full lines Figs. 4, 5, 6, 8, whereby the plate G is lowered so that it will engage or strike against the lug H connected with the point-shifting bar J. In this operation the operator places the handle C in a laterally inclined position, as indicated by dotted lines Fig. 6, so that the plate G is in turn placed at an inclination to the rails, and thus the lug H will slide along and be shifted by said plate as the car advances. Thus the point K, which is in front of the car, will be shifted so as to close the switch and the car may therefore continue on the main track.

As is well known to railway experts, no two cars are gaged exactly alike, so as to run exactly in line. This is one of the reasons why an elastic connection is provided between the switch points and the block H with which the rod A attached to a car platform is adapted to coöperate. The switch points K require to move or shift laterally only $1\frac{1}{2}$, or 2, inches, but the springs L permit a much larger movement of the block *j′*; that is to say, when the contact plate G strikes the lug H of

the block *j'*, the block tends to slide on the rod J and to compress one or the other of the springs L, and, when the pressure upon such springs is sufficient, the points K will be shifted. Thus, the block *j'* may move several inches, even 8 or 9 if necessary. This adaptation of the block *j'* for lateral movement allows a much larger horizontal contact plate G to be used and also prevents a sudden or violent shock of contact on the rod A, so that there is no more danger of breaking or bending, as would be the case if there were no elastic connection or bearing between the plate G and the lug H of the said block. In brief, by means of springs L and the collar M, I provide for a double elastic contact between the plate G and the switch points K. A thin plate is placed over the slot in the frog plate N and the lug H projects through it as indicated in Fig. 2, this plate slides into the lug and its purpose is to prevent dirt and other foreign matter from falling into the slot and thus by accumulation hinder the operation of block *j'* and connections. It will be understood that the weight of the switch points K is sufficient to hold them in a position to which they may be adjusted so that when a car crosses over them they will remain in the position taken until again shifted by the contact mechanism already described.

It is apparent that, by raising the lever C, the plate G may be placed at any height required to enable it to pass over obstructions in the path of the car, and that when the lever is set vertically as indicated in Fig. 8, the shaft A and plate G will be held locked in the raised position, the lever C being engaged by a spring catch F secured to the platform guard, or an attachment thereof. This is the normal or proper position of the lever C when the switch-operating mechanism is out of use; and it is apparent that the lever may be instantly lowered and shifted laterally so as to lower and rotate the shaft A as required to operate the switch in one operation.

What I claim is—

1. The combination, with a street-railway-car platform, of a rotary and vertically slidable shaft having its lower end provided with a horizontal member adapted to engage a shaft, a switch-shifting device, guides for said shaft, a collar in which the shaft is adapted to slide but prevented from rotating, a hand lever pivoted to the collar, and bars which connect the lever and shaft adjustably and serve, when the lever is raised, to lift the shaft and support it in elevated position, substantially as described.

2. The combination, with a street-car platform, of a rotary and vertically slidable shaft having its lower end provided with a member adapted to engage a switch-point-shifting device, a guide for such shaft, and a device adapted for manual adjustment, and means which operatively connect it with the aforesaid shaft whereby the latter may be raised and rotated in the manner described.

3. The combination, with a car platform, of a vertically slidable shaft having a foot member for operating a switch point, a fixed bracket in which the shaft is adapted to slide and rotate, a collar supported upon the bracket and having a polygonal opening corresponding to the polygonal form of the shaft, whereby the latter is free to slide without rotating in the collar; a hand lever pivoted to the said collar, and means for connecting it with the shaft below the bracket, whereby the said lever may be manipulated to raise or rotate the shaft as conditions require.

4. The combination, with a street-car platform, of a vertically slidable shaft having a foot adapted to operate a switch-point, a fixed guide for said shaft, a lever which is connected with the latter and adapted to rotate it, a device pivotally connecting the lever and shaft, and serving, when the lever is elevated in alinement with the shaft, to support the latter in the manner described.

5. The combination, with a street-car platform, of a vertically slidable shaft having a foot member adapted for shifting the switch point, a fixed guide for said shaft in which it may slide and rotate, a hand lever which is operatively connected with the shaft for rotating or raising it, and a spring catch fixed to the platform guard and adapted for engaging and locking the lever when in an elevated position, substantially as described.

THOMAS J. BURKE.

Witnesses:
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