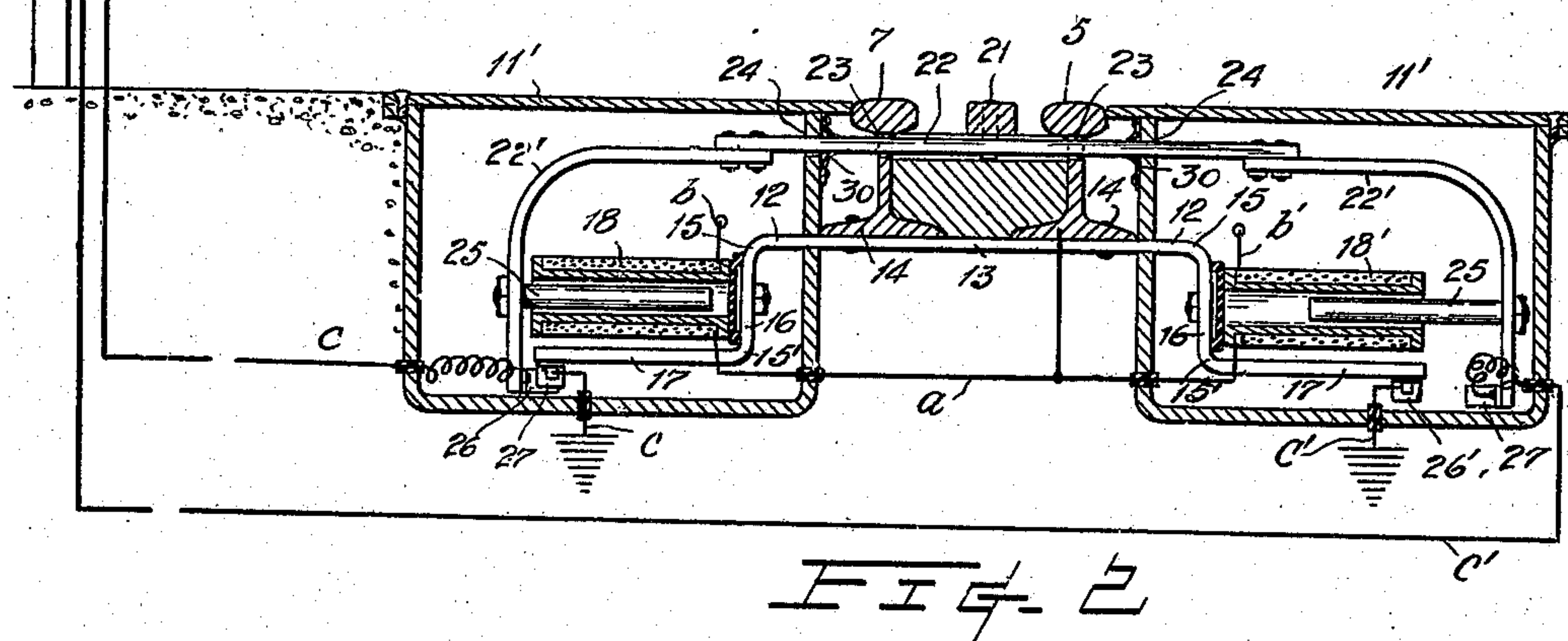
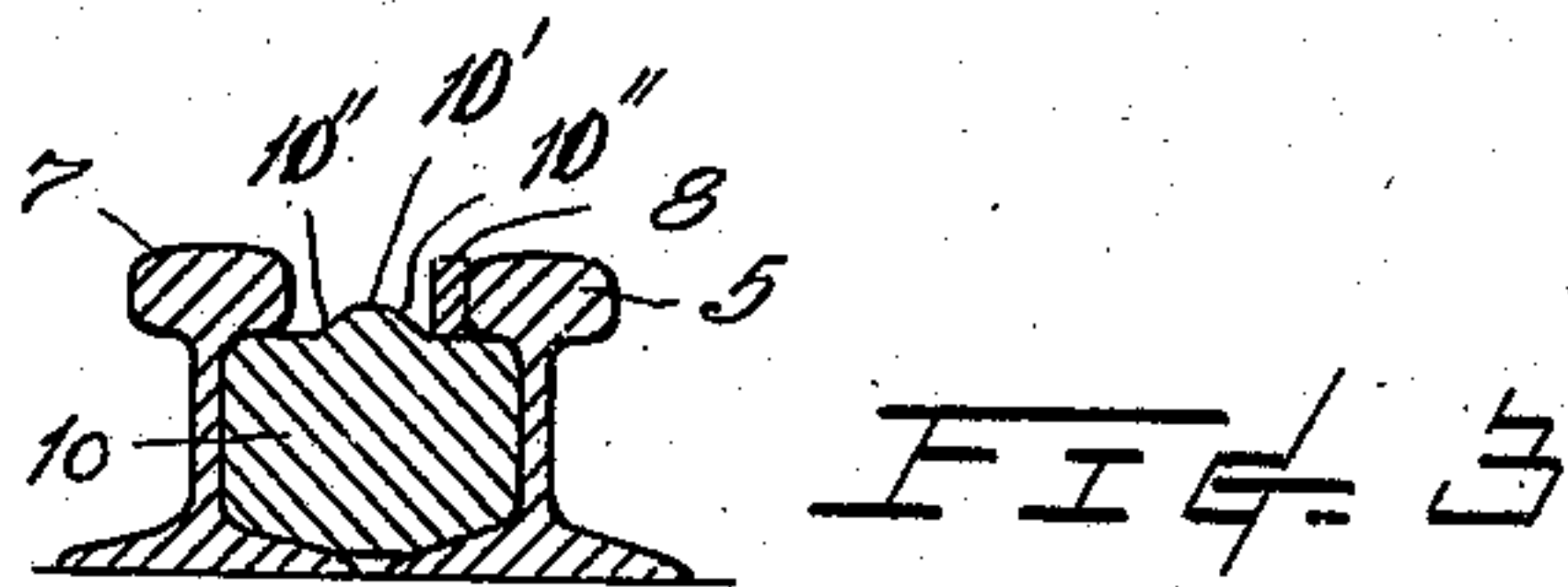
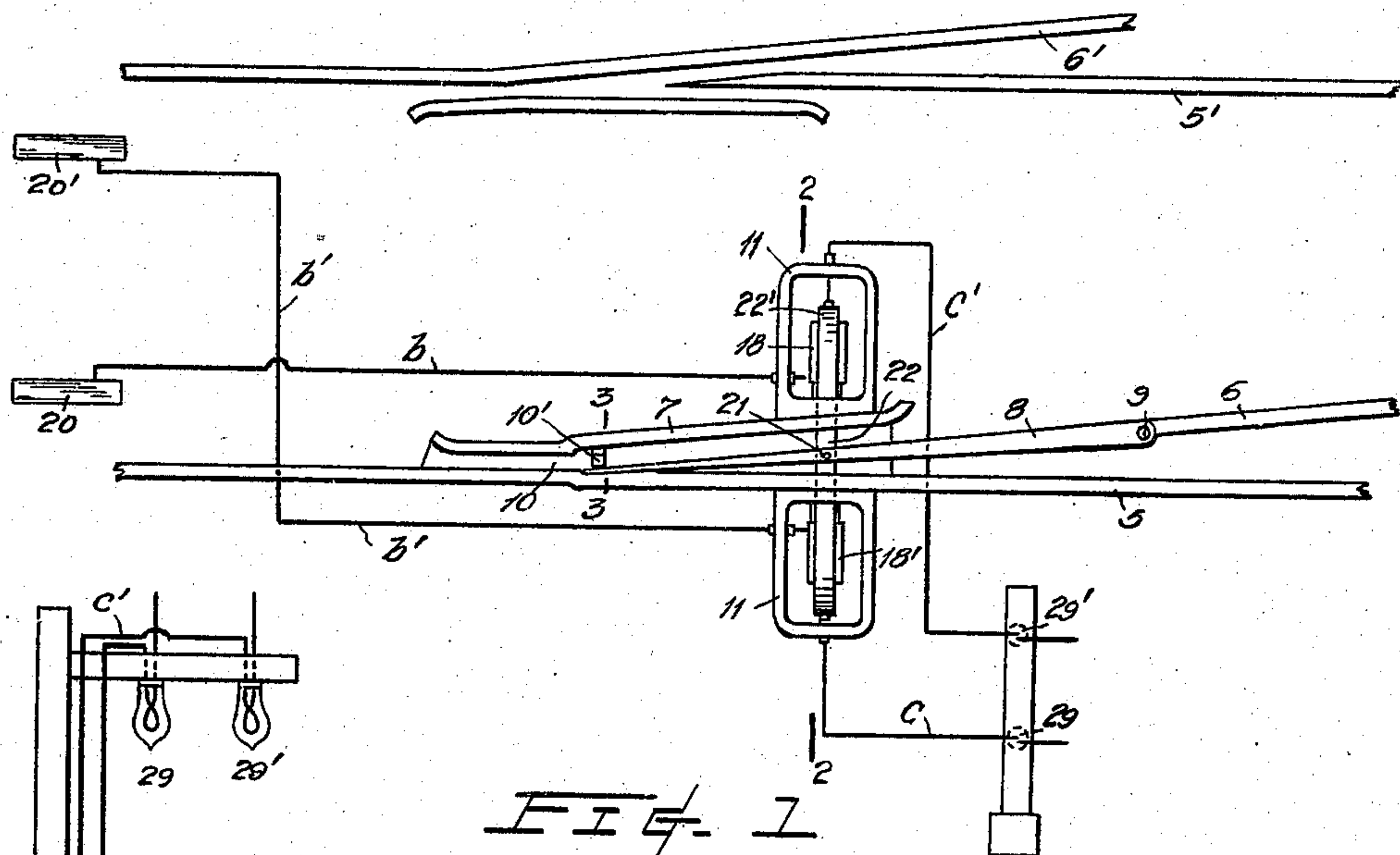


No. 866,983.

PATENTED SEPT. 24, 1907.

G. M. THOMPSON.
RAILWAY SWITCH.

APPLICATION FILED NOV. 26, 1906.



UNITED STATES PATENT OFFICE.

GUY M. THOMPSON, OF SEATTLE, WASHINGTON, ASSIGNOR OF ONE-FOURTH TO CHARLES S. FOLLETT, OF SEATTLE, WASHINGTON, AND ONE-EIGHTH TO SAMUEL E. LANCASTER AND ONE-EIGHTH TO JACOB A. MEYER, BOTH OF LE CLAIRE, IOWA.

RAILWAY-SWITCH.

No. 866,983.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed November 26, 1906. Serial No. 345,013.

To all whom it may concern:

Be it known that I, GUY M. THOMPSON, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a plan view of a railway track switch embodying my improvements; Fig. 2, a transverse section of same taken through 2—2 of Fig. 1; and Fig. 3, a like view taken through 3—3 of Fig. 1.

The present invention relates to railway switches and particularly to improvements in the invention shown and described in United States Patent No. 815,314 issued March 13, 1906. Its object is to so construct and combine the various operative parts of the switch actuating mechanism that the apparatus will be rendered more serviceable, less liable to become deranged, the parts being made more accessible for renewal or repair, and protected against the ingress of dirt, snow or other substances which might interfere with its operation.

The invention consists in the improved construction, adaptation and combination of parts as will be hereinafter set forth.

In the drawings, the reference numerals 5 and 5' represent the rails of a main track; 6 and 6', the rails of a branch or turn-out; 7, a guard rail; and 8, a switch-tongue which is pivoted at 9.

10 is a filler employed to hold the rails 5 and 7 in position and furnish a bed for the tongue, is of ordinary type excepting that in proximity of the tongue point there is provided an upwardly protruding lug 10', see Figs. 1 and 3, having sloping faces 10'' which in swinging the tongue necessitates its being first raised to pass over the lug but facilitates the last portion of its travel by presenting a downwardly sloping bearing to direct the tongue into close relation with the rail toward which moved.

At the outer sides of the guard rail and the adjacent main-rail, respectively, are liquid-tight casings 11 having a removable cover plate 11' to each. A transversely arranged bracket 12 is provided within each said casing which, for strength and convenience, are desirably formed upon the ends of a bar 13 rigidly secured to the flanges 14 of the last mentioned rails and, within each casing, it is given two rectangular bends 15, 15' to furnish an upright intermediate portion 16 and a horizontal extremity 17.

Rigidly secured to the bracket parts 16 are oppositely disposed electro-magnets 18, 18' having aligned axes and having their helical windings connected by

ground wires *a*, desirably through a track-rail as shown in Fig. 2, and likewise respectively connected by wires *b*, *b'* with the terminal contact plates 20, 20' which are positioned, desirably, in the track-bed and at any convenient distance from the switch.

Movably connected with the tongue 8, as by a pin 21, is a transverse bar 22 extending through aperture 23 of rails 5 and 7, and 24 of the casings and, within the casings the bar is provided with detachable extension pieces 22' which are curved downwardly to furnish supports for solenoid cores 25, 25' of said magnets. Secured to the extension pieces 22' and the bracket parts 17, respectively, are terminals 26, 26' and 27, 27' of incomplete electric circuits *c* and *c'* having therein electric lamps 29 and 29' which are employed to designate the open or closed condition of the switch.

30, 30, are apertured collars of some flexible material, as sheet rubber, which is secured to the casing walls about the apertures 23, 24 for the purpose of wiping from the bar 22 any dirt which may become attached to the latter. The circuits *a* or *a'*, as the case may be, are completed by independent contact-makers and depressible brush devices carried by a car and may be of any suitable type such as illustrated in the before-mentioned patent.

The operation of the invention is as follows: when either of the circuits *a* or *a'* are completed by manipulation of the proper contact-maker upon an approaching car, the respective electro-magnet 18 or 18' is energized thereby swinging the tongue through the connecting bar 22, 22'. Upon changing the position of the switch tongue this bar carrying the terminals 26, 26' of the light circuits will obviously bring one of such terminals out of contact with its complement 27 or 27' and put the other into contact thereby breaking the previously complete circuit to extinguish its light and completing the then incomplete circuit to effect the lighting of the lamp included in the circuit being completed.

The electro-magnets may be of any approved type which are capable of transmitting the required energy and are desirably protected against moisture by inclosing them in a wrapping impervious to water as by ordinary lead sleeves.

The signal devices may be varied to suit special conditions as to the arrangement and wiring of the lamps, or a lamp may be employed to designate one position only of the switch, and during daylight semaphores can be utilized as supplementary to the lights used for night service.

The apparatus as now perfected is adapted to meet the conditions prevailing in railway practice; the power is applied to act in direct lines; the electrical portion

of the apparatus is thoroughly guarded against any liability of becoming fouled, and the actuating mechanism is, when the casing covers are removed, exposed to view for making any changes or adjustments thereto.

5 What I claim, is—

1. In an electrically-operated switch, the combination with the track-rails and a tongue, of two contact plates positioned at some distance from the switch and respectively forming the terminals of two incomplete circuits, an
10 electro-magnet included in each such circuit and positioned within casings disposed upon opposite sides of the tongue, a supporting bar attached to the base of said track rails and extending into said casings and having its ends shaped to form brackets for supporting said electro-mag-
15 nets, a transversely arranged bar connected to the tongue and extending through apertures of and into the casings, devices attached to each of said casings for wiping the bar, and a solenoid core for each said electro-magnet and rigidly secured to said bar interiorly of the respective
20 casings.

2. In an electrically-operated switch, the combination with the track-rails and a tongue, of two contact plates positioned at some distance from the switch and respectively forming the terminals of two incomplete circuits, an
25 electro-magnet including in each such circuit and positioned within casings disposed upon opposite sides of the tongue, a supporting bar extending into the confronting ends of the casings and being attached to said rack rails,

and having brackets on its ends within said casings, upon which said electro-magnets are supported, a transversely
30 arranged bar connected to the tongue and extending through apertures of and into the casings, a solenoid core for each said electro-magnet and rigidly secured to said bar interiorly of the respective casings, and the terminal
35 of an incomplete light-circuit secured to said bar within each casing, one of said terminals of each such pair being secured to said bar.

3. In an electrically-operated switch, the combination with the track-rails and a tongue, of two contact plates positioned at some distance from the switch and respec-
40 tively forming the terminals of two incomplete circuits, an electro-magnet included in each such circuit and positioned within casings disposed within opposite sides of the tongue, a supporting bar connected to the said track rails with its
45 ends extending into said casings, brackets carried on the ends of said bar within the casings and to which the said electro-magnets are secured, a transversely arranged bar connected to the tongue and extending through apertures of and into the casings, and a solenoid core for each said
50 electro-magnet and rigidly secured to said bar interiorly of the respective casings.

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

GUY M. THOMPSON.

Witnesses:

PIERRE BARNES,
W. F. RODGERS.