

No. 791,416.

PATENTED MAY 30, 1905.

W. P. GRAY & G. W. SMITH.

RAILROAD SWITCH.

APPLICATION FILED FEB. 16, 1905.

2 SHEETS—SHEET 1.

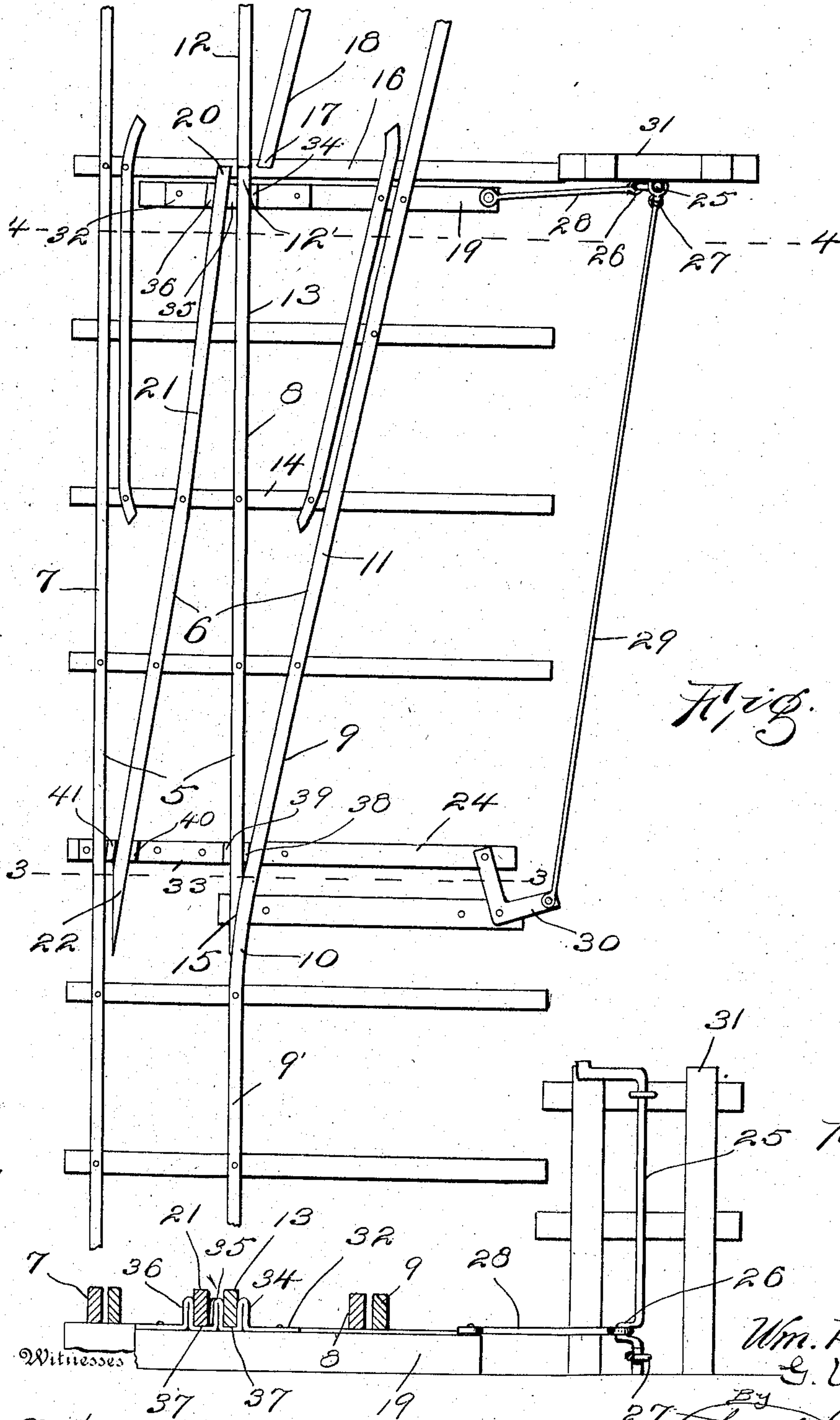


Fig. 1.

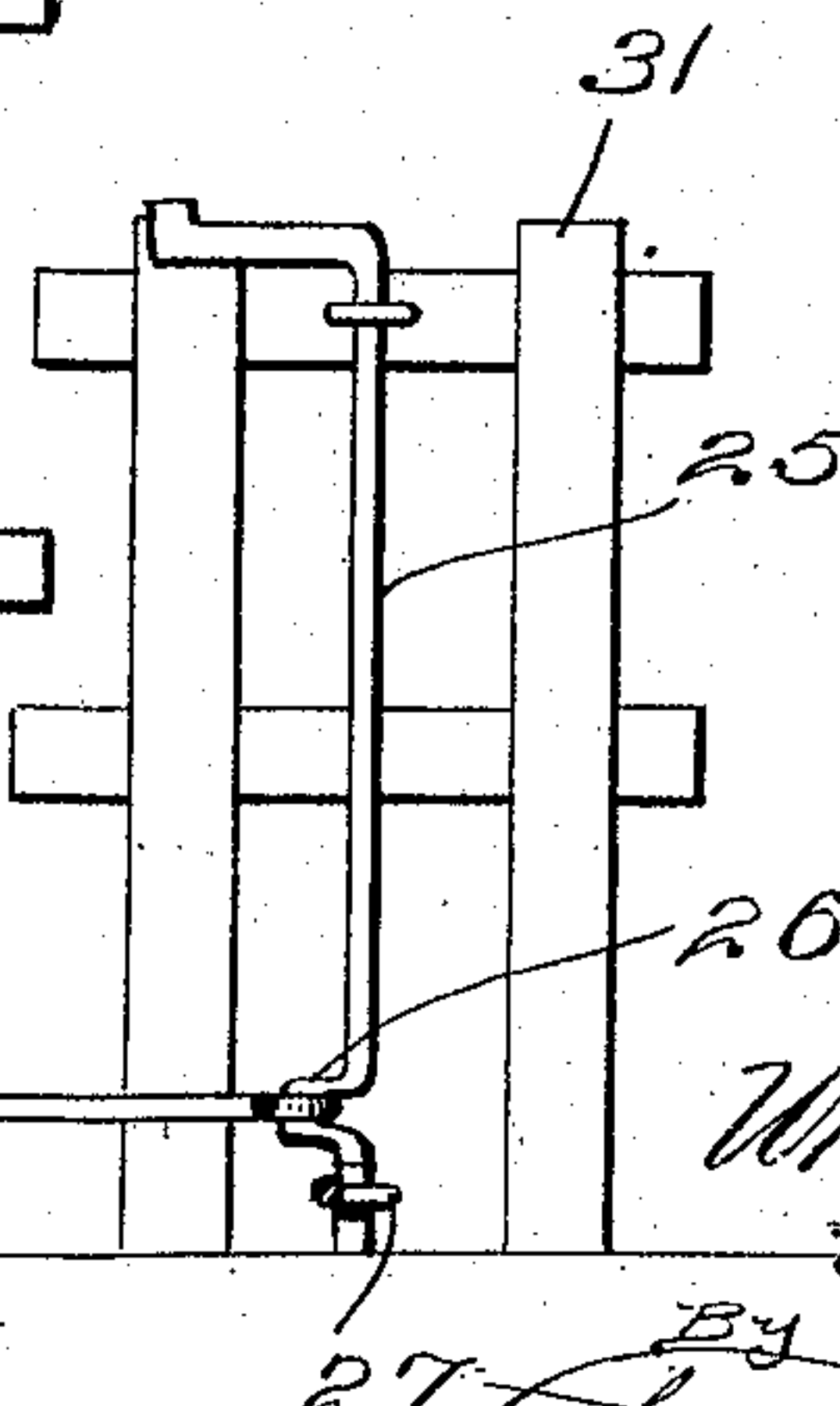


Fig. 4.

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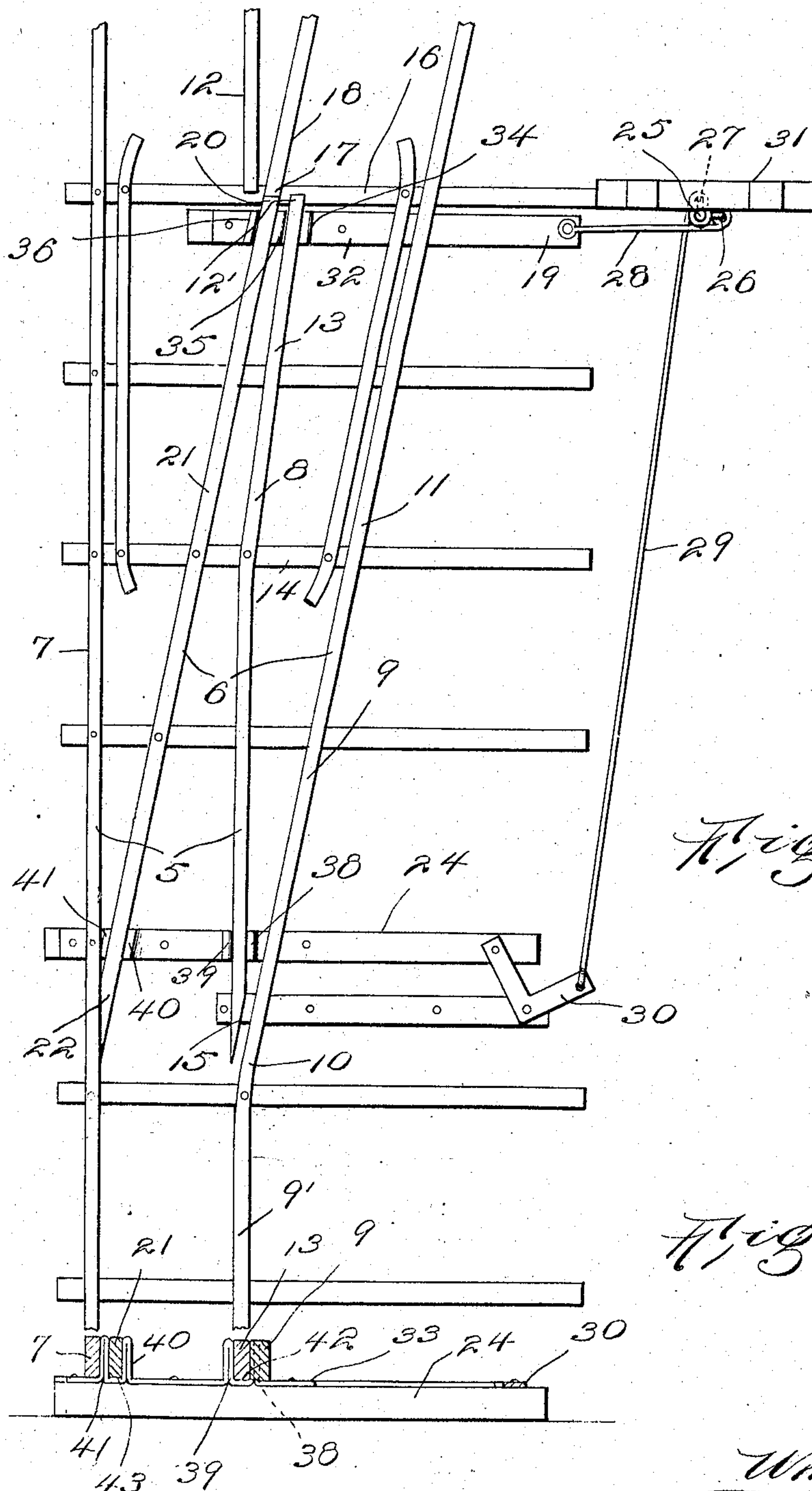
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UNITED STATES PATENT OFFICE.

WILLIAM P. GRAY AND GEORGE W. SMITH, OF CAMPBELLTON, CANADA;
SAID SMITH ASSIGNOR OF HIS RIGHT TO ALEXANDER McLENNAN AND
CHARLES A. GOSS, OF CAMPBELLTON, CANADA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 791,416, dated May 30, 1905.

Application filed February 16, 1905. Serial No. 245,941.

To all whom it may concern:

Be it known that we, WILLIAM P. GRAY and GEORGE W. SMITH, subjects of the King of England, residing at Campbellton, in the Province of New Brunswick, Dominion of Canada, have invented certain new and useful Improvements in Railroad-Switches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railways, and more particularly to switches, and has for its object to provide a switch which will be efficient in operation and which will do away with the use of frogs.

Another object is to provide a switch in which two rail-sections will embody all of the moving portions of the rails and in which the moving portions will be operated simultaneously.

Other objects and advantages will be apparent from the following description, and it will be understood that modifications of the specific construction shown may be made and any suitable materials may be used for the various parts without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top plan view of the present invention, showing the movable rail-sections in one position. Fig. 2 is a view similar to Fig. 1, showing the switch in the other position. Fig. 3 is a section on line 3 3 of Fig. 1, showing the adjacent shift-bar in side elevation. Fig. 4 is a section on line 4 4 of Fig. 1, showing the other shift-bar and the switch-operating shaft and support in elevation.

Referring now to the drawings, there are shown a main track 5 and a branch track 6. The main track includes one continuous rail 7 and a rail 8. At one end of the portion illustrated the rail 8 is formed by a portion 9' of a rail 9, this rail being turned at an angle, as shown at 10, and slanting away from the main track 5 to form one of the rails 11 of the track

6. Spaced from the portion 9' of the rail 9 there is a rail-section 12, which lies parallel to the rail 7 and forms a portion of the track 5.

A rail-section 13 is secured between its ends to a cross-tie 14 and lies between the portion 9' of the rail 9 and the rail-section 12, and the end portions of this rail-section 13 are free to move laterally, the resiliency of the metal of which the section is formed permitting of this movement. At its end which lies in the direction of the section 9' of the rail 9 the rail-section 13 is beveled, as shown at 15, to lie against the inner face of the portion 11 of the rail 9 adjacent to the angle 10 and in position to form a continuation of the section 9', and the portion of the rail-section 13 between its point of attachment and the section 9' of the rail 9 lies normally in the position just described. The portion of the rail-section 13 which lies between the point of attachment of the section and the rail-section 12 lies normally in alinement with the rail-section 12 to form a continuation of this section, and the rail-sections 12 and 13, together with the section 9' of the rail 9, form the complete rail 8 for the track 5.

The rail-section 12 has its end 12' which lies adjacent to the rail-section 13 disposed upon a cross-tie 16, and disposed with its end 17 upon this same cross-tie adjacent to the end 12' of the rail-section 12 there is a rail-section 18, which diverges from the rail-section 12 and which lies parallel to the portion 11 of the rail 9, thus forming a portion of the other rail for the track 6.

The free end portion of the rail-section 13 which lies in the direction of the rail-section 12 is secured to a transversely-extending shift-bar 19, and secured to this shift-bar 19 adjacent to the end portion of the rail-section 13 there is one end 20 of a rail-section 21, which extends diagonally between the rails of the track 5 and lies with its other end, 22, in a line transversely of the track 5 with the beveled end of the rail-section 13, this end 22 being beveled, as shown at 23, to lie against the inner face of the rail 7, and adjacent to the end 22 the rail-section 21 is secured to a trans-

versely-extending shift-bar 24, which extends beneath the rail, the adjacent end portion of the rail-section 13 being also secured to this shift-bar, and it will be observed that the adjacent end portions of the two rail-sections 13 and 21 may be moved simultaneously by means of the shift-bars 19 and 24. The arrangement of parts is such that the end 22 of the rail-section 21 lies normally in spaced relation to the rail 7, and the end portion 20 of the rail-section lies normally between the rails of the track 5, though by shifting the shift-bars 19 and 24 the end portion 20 of the rail-section 21 may be brought into alinement with the rail-section 18, and the end portion 22 may be brought into engagement with the inner face of the rail 7, the end portions of the rail-section 13 being at the same time moved out of their normal positions, as will be readily understood, and the switch will then be in position to pass from the track 5 to the track 6.

To simultaneously move the shift-bar, an upright crank-shaft 25 is provided, which has cranks 26 and 27 extending at right angles to each other. The crank 26 is connected to the shift-bar 19 by means of a link 28, a somewhat longer link 29 being connected to the crank 27 and with a bell-crank lever 30, which is pivoted adjacent to the shift-bar 24 and which is also connected therewith for movement of the shift-bar when the crank-shaft is revolved, and the arrangement of the links and cooperating mechanism is such that the end portions of the rail-sections 13 and 21 are shifted simultaneously, as mentioned above. The crank-shaft 25 is supported by brackets secured to a supporting-frame 31.

The rail-sections are secured to the shift-bars 19 and 24 by means of plates 32 and 33, respectively, the plate 32 being bent upwardly and then downwardly, as shown at 34, and being similarly bent, as shown at 35 and 36 to form a plurality of upwardly-extending projections which are spaced from each other to form rail-receiving recesses 37, and in these recesses are disposed the end portions of the rail-sections 13 and 21. The plate 33 is bent similar to the plate 32 to form four upwardly-extending projections 38, 39, 40, and 41, these projections being arranged in pairs and spaced from each other to form rail-receiving recesses 42 and 43, and the pairs of projections are spaced from each other to receive the other end portions of the rail-sections 13 and 21 in the recesses 42 and 43. The projections of the plates 32 and 33 are arranged to permit of longitudinal movement of the rail-sections engaged therebetween with respect to the pro-

jections, this movement being necessary, as will be readily understood, to permit of the lateral movement of the rail-sections.

What is claimed is—

1. A switch mechanism including a main track and a branch track, said main track including two rails, one of said rails comprising spaced sections and an intermediate section, said intermediate section being arranged for movement of its end portions into and out of alinement with the end sections, said branch track including two rails, and a rail-section disposed between the rails of the main track and being arranged for movement of one of its end portions into and out of engagement with one of the rails of the main track and being arranged for movement of its other end portion into and out of alinement with one of the sections of the branch track, and means for moving the end portions of the two movable rail-sections simultaneously.

2. In a switch mechanism, the combination with movable rails, of shift-bars disposed beneath the rails, and plates secured to the shift-bars, said plates being bent upwardly and then downwardly to form a plurality of spaced vertically-extending projections, said plates being disposed with the movable rails engaged between the projections, said rails being movable longitudinally between the projections.

3. In a railway-switch the combination with fixed rail-sections, of rail-sections secured at points between their ends between the fixed sections, the second-named sections being arranged for movement of their end portions into and out of engagement with the fixed sections, and means for simultaneously moving the end portions of the second-named rail-sections.

4. In a railway the combination of main-track rails, one of said rails having a gap therein, of branch rails diverging from the rail having the gap, a rail-section arranged for movement to bring its end portions into and out of engagement with the portions of the rail at the sides of the gap, and a second rail-section disposed with one end adjacent to the other main-track rail to receive a wheel therefrom, and being arranged for movement of its other end into and out of alinement with the corresponding rail of the branch track.

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

WILLIAM P. GRAY,
GEORGE W. SMITH.

Witnesses:

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