No. 785,664. PATENTED MAR. 21, 1905.

E. G. CLIFT & E. E. WOOSLEY.

RAILWAY SWITCH.

APPLICATION FILED MAR. 9, 1904.

2 SHEETS—SHEET 1.

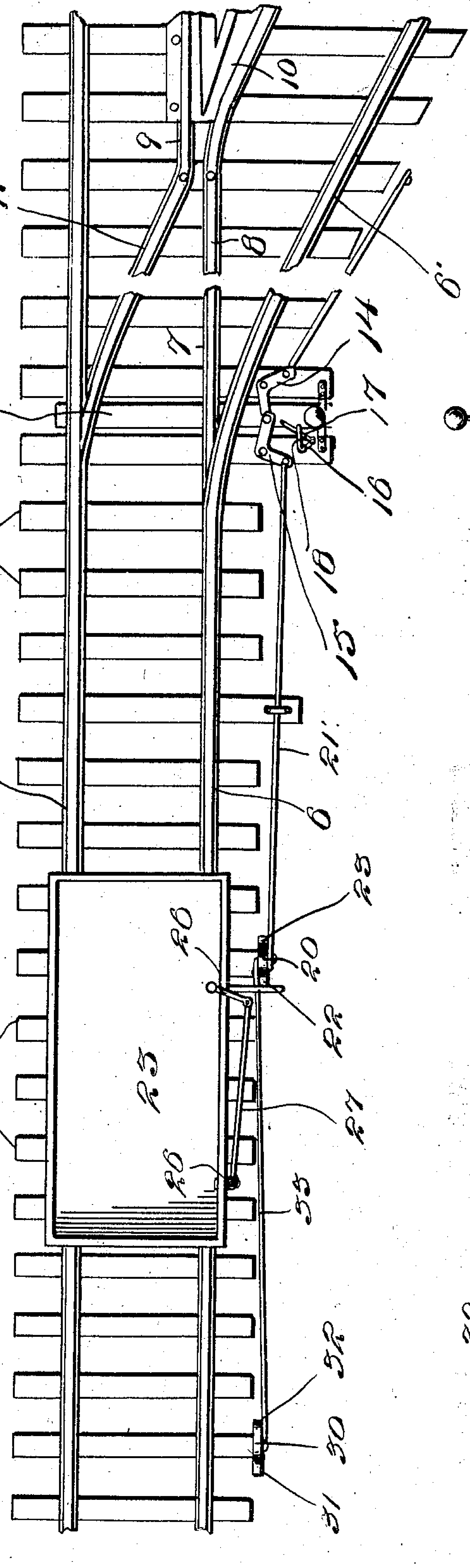

Fig. 1.

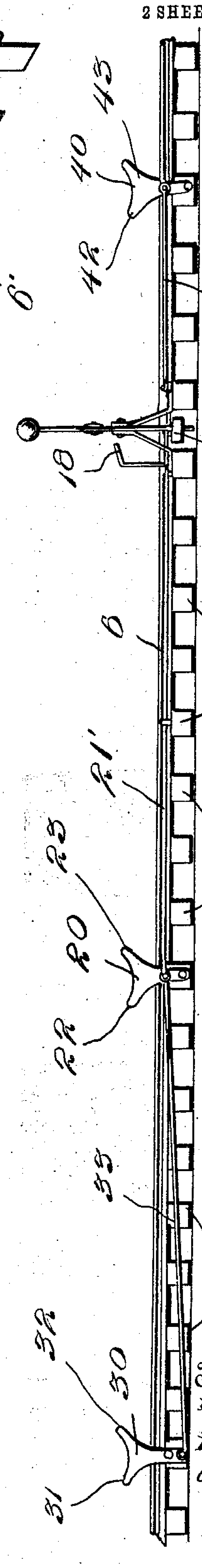

Fig. 2.

Witnesses
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[illegible]

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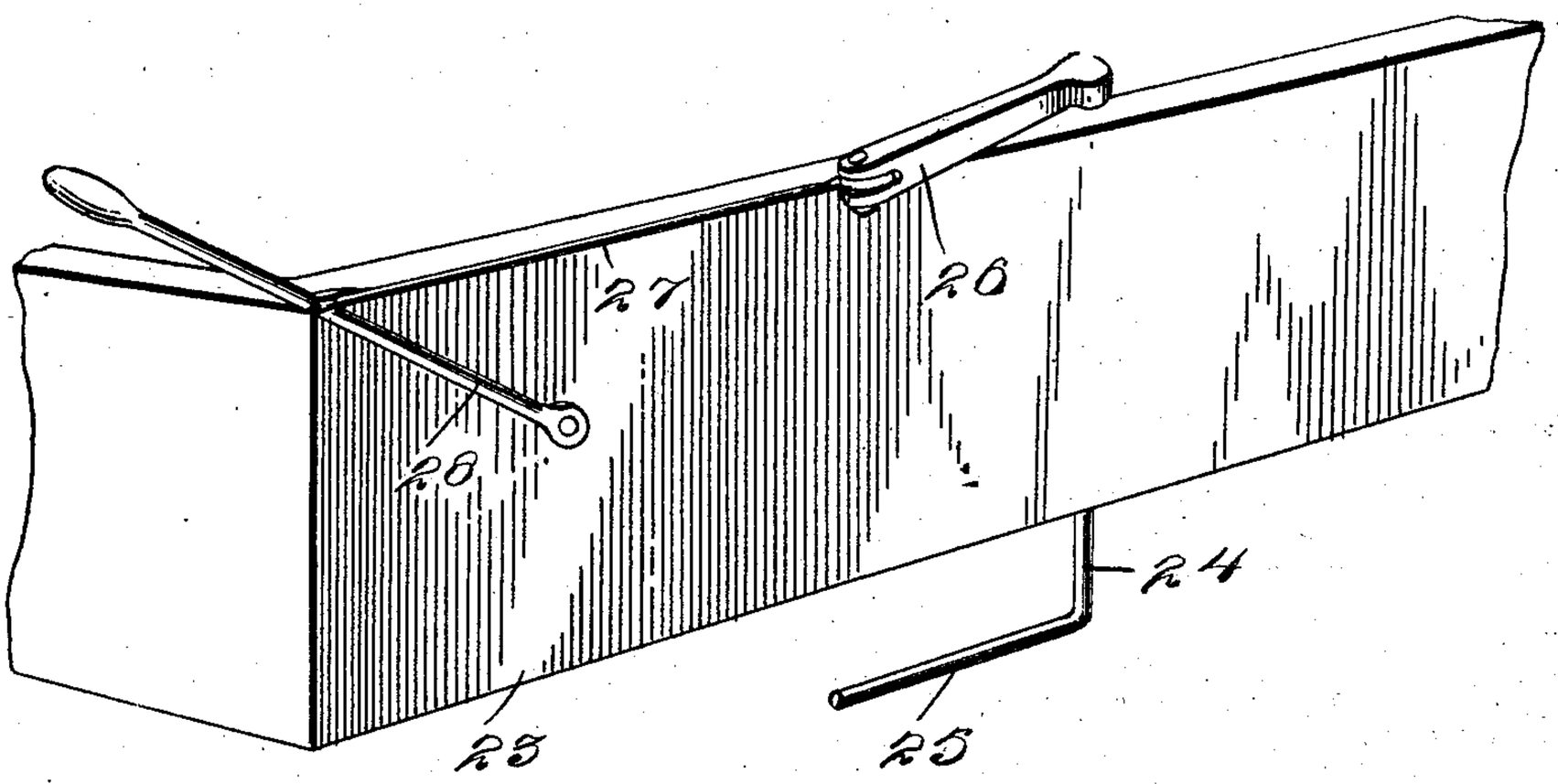

Fig. 3.

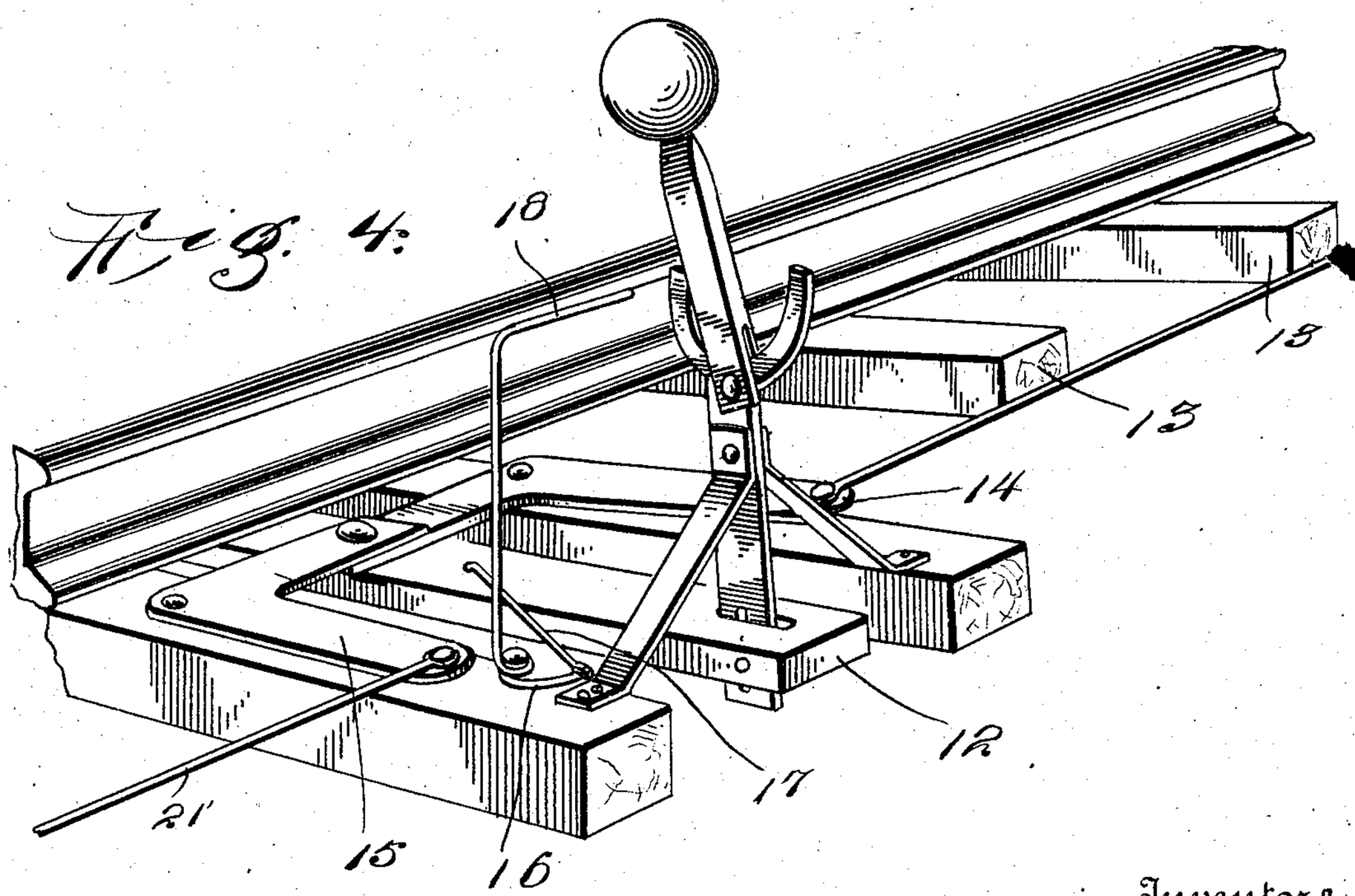

Fig. 4.

Witnesses.
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No. 785,664. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

ERNEST G. CLIFT AND EMERY E. WOOSLEY, OF MOUNTAINVIEW, MISSOURI.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 785,664, dated March 21, 1905.

Application filed March 9, 1904. Serial No. 197,338.

To all whom it may concern:

Be it known that we, ERNEST G. CLIFT and EMERY E. WOOSLEY, citizens of the United States, residing at Mountainview, in the county of Howell, State of Missouri, have invented certain new and useful Improvements in Railway-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 railway-switch-operating mechanisms; and it has for its object to provide, in connection with a main line and a siding, means located partly along the railway and partly upon a car for swinging the switch-rails into position to open or to close the siding, as may be preferred.

A further object of the invention is to provide an arrangement of this character which will be cheap and easy to install and which will be efficient in its operation.

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 showing a portion of a main line of a railway and a portion of a siding, with means embodying the present invention for shifting the switch-rails. Fig. 2 is a side elevation of the structure shown in Fig. 1. Fig. 3 is a perspective view showing, on an enlarged scale, the actuating mechanism carried by a car. Fig. 4 is a detail perspective view showing the switch-bar with the mechanism that is connected thereto for operating it manually and from the car.

Referring now to the drawings, there is shown a portion of a railway, including a main track and a siding. The main track comprises a rail 5 and a rail 6, the latter being curved laterally to form one of the rails 6′ of the siding, so that there is a continuous rail from the main track into the siding at one side of the latter. The main track comprises also a rail 7 parallel with the rail 5 and which alines with a pivoted switch-rail 8, which is movable to lie against the inner side of the rail 6 or in spaced relation thereto. When the switch-rail is against the rail, the siding is closed, and when in spaced relation to the rail 6 the siding is open. Between the rails 5 and 7 is a crossover-rail 9, which leads from the usual frog 10 to a point adjacent to the rail 5, and from this point extends a second pivoted switch-rail 11, which is movable into and out of position to lie against the inner face of the rail 5.

The switch-rails 8 and 11 are connected to a switch-bar 12, passed transversely beneath the rails 5 and 6′, so that when the bar 12 is reciprocated the switch-rails 8 and 11 will alternately lie against the inner faces of their corresponding track-rails or in spaced relation thereto to close and open the siding.

The rails are mounted upon the usual ties 13, between two of which the bar 12 is slidable and upon which are pivoted angular levers 14 and 15, which are connected at one end with the bar 12, the opposite ends of the angular levers extending away from the track, as illustrated. A second angular lever 16 is mounted upon one of the ties 13 adjacent to the bar 12 and is connected at one end thereto through the medium of the link or pitman 17, the lever 16 having a handle 18 for operating it.

To open the siding from a car approaching the siding in a direction to run into it, a rocker 20 is provided, which is pivoted at the outer side of the rail 6 at the lower end of the rocker, and connected to this rocker at a point above its pivot is a rod 21′, which is connected to the outer end of the angular lever 15, the rod 21′ passing through suitable guides. As the rocker is moved in one direction the lever 15 is moved to shift the bar 12 and open the siding, and when the rocker is shifted in the opposite direction the bar 12 is removed to close the siding. The rocker 20 is concaved in its upper edge, so that there are provided two upwardly-directed arms 22 and 23. When the siding is open, the arm 21 projects substantially vertically, and when the siding is closed the arm 22 projects substantially vertically.

There is illustrated a car 23 equipped with a mechanism for actuating the rocker 20, which mechanism includes a vertical rock-shaft 24, having at its lower end a laterally-

directed arm 25 and at its upper end a second laterally-directed upper arm 26, which latter is connected by means of a pitman 27 with a hand-lever 28, fulcrumed upon the side of the car. When the lever 28 is moved in one direction the arm 25 is projected at right angles to the sides of the car, and when the lever is moved in the opposite direction said arm is swung into position beneath the body of the car. When the arm 25 is projected from the side of the car, it is in position to strike either of the arms 21 and 22, which may be in the vertical position. If the siding is closed, so that the arm 22 projects upwardly, then by swinging the arm 24 out from the side of the car it will pass over the arm 21 and engaging the curved edge of the arm 22 will move the latter, so that the rocker 20 will be rocked in a direction away from the car or in the direction of progress of the car and the bar 12 will be moved to swing the switch-tongue 8 away from the rail 6 and the switch-tongue 11 against the rail 5, thus opening the siding. When the train approaches the siding, but does not wish to pass into it, there must be provided some means for insuring that the siding has been closed after a previous train has passed into it, and for this purpose a rocker 30 similar to the rocker 20 is provided and having its upper edge concaved to form the spaced arms 31 and 32. The rocker 30 is connected with the rocker 20 by means of a rod 33, which is attached to the rocker 30 below the pivot of the latter and to the rocker 20 above its pivot. If the siding is open, the arm 32 will stand substantially vertically and may be engaged by the arm 25 to shift the rocker 30 and swing the switch-rails to close the siding, it being understood that the lever 28 is operated to retract the arm 25 before the rocker 20 is reached.

In order that the train may close the siding after it is passed into the latter, a rocker 40 is pivoted at its lower end and is connected at a point above its pivot with the outer end of the angular lever 14 by means of a rod 41. The rocker 40 has the arms 42 and 43 formed by concaving the upper edge of the rocker, and when the siding is open the arm 43 extends upwardly into position for engagement by the actuating-arm 25 upon the car. When the arm 25 strikes the arm 43, the rocker is shifted by pulling on the rod 41, actuating the lever 14 and the bar 12 to shift the switch-rails and close the siding.

When a train is passing in the opposite direction from the siding, the siding will be opened by contact of the arm 25 with the arm 42, and it will be closed by contact of the arm 25 with the arm 21 of the rocker 20.

It will be understood that in practice modifications of the specific construction shown may be made and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. The combination with a railway including a main track, a siding and movable switch-rails, of a rocker having spaced arms and connected with the switch-rails to move them into and out of position to open the siding, said arms being positioned to project alternately one above the other as the switch-rails are moved to open and closed positions, a second rocker having spaced arms and connected with the first-named rocker for swinging the latter oppositely to itself, and a third rocker adjacent to the siding and connected with the switch-rails for shifting the latter oppositely to the first-named rocker when moved in the same direction, the third rocker having also upwardly-directed spaced arms positioned to lie alternately one above the other when the rocker is rocked.

2. The combination with a railway including a main track, a siding and movable switch-rails, of a rocker having spaced arms and connected with the switch-rails to move them into and out of position to open the siding, said arms being positioned to project alternately one above the other as the switch-rails are moved to open and closed positions, a second rocker having spaced arms and connected with the first-named rocker for swinging the latter oppositely to itself, and a third rocker adjacent to the siding and connected with the switch-rails for shifting the latter oppositely to the first-named rocker when moved in the same direction, the third rocker having also upwardly-directed spaced arms positioned to lie alternately one above the other when the rocker is rocked, and a car having a rock-shaft provided with means for oscillating it and having an arm disposed for movement with the shaft into position to engage the arm of the rocker having the greater elevation.

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

ERNEST G. CLIFT.
EMERY E. WOOSLEY.

Witnesses:
N. A. SKINNER,
J. M. GLICK.