

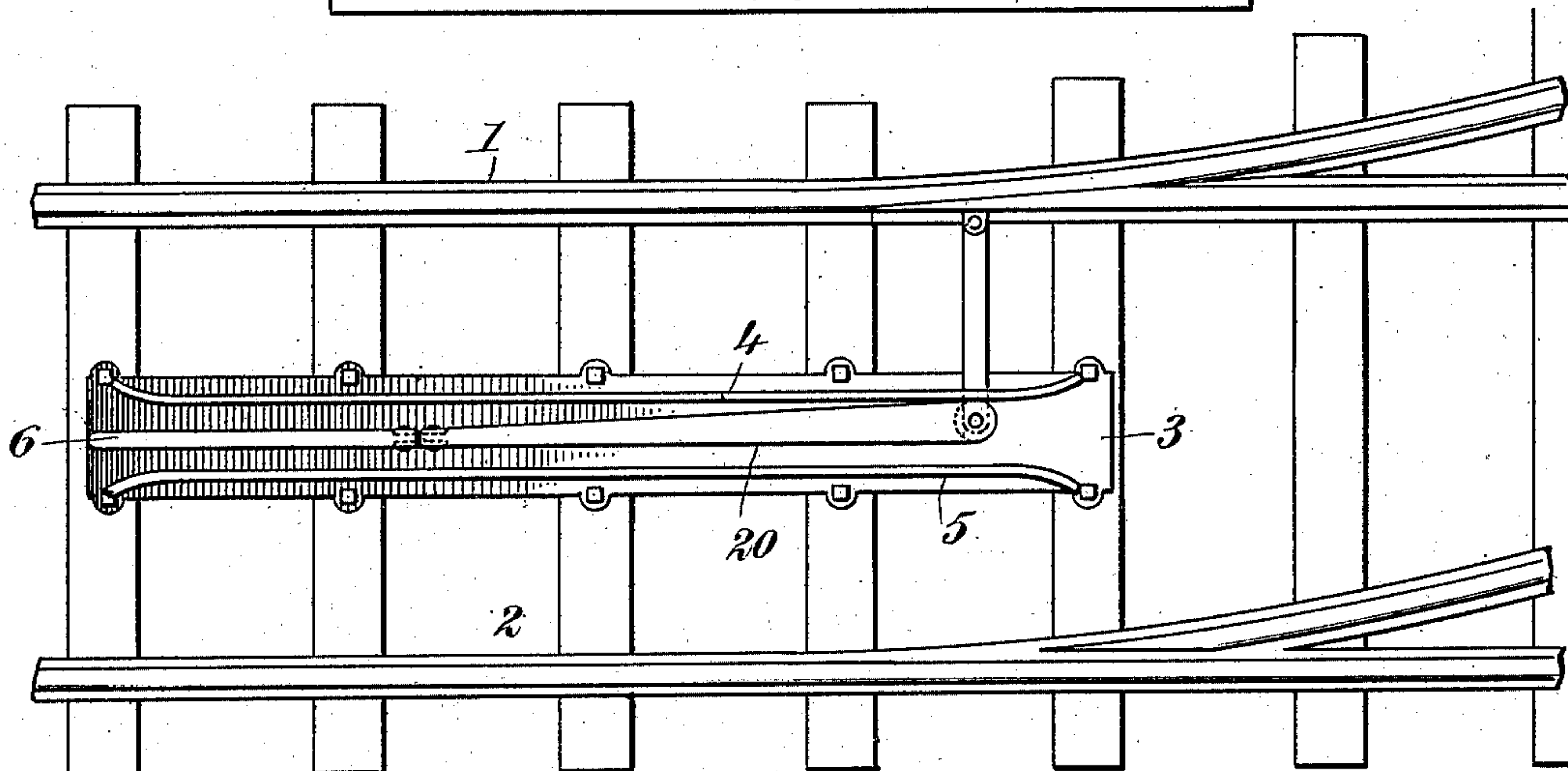
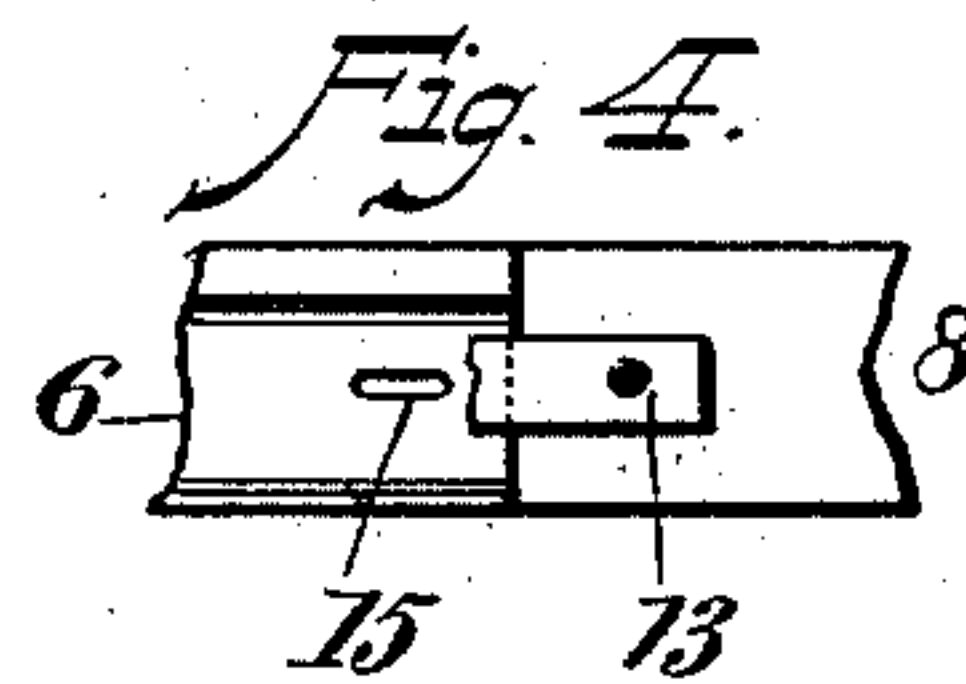
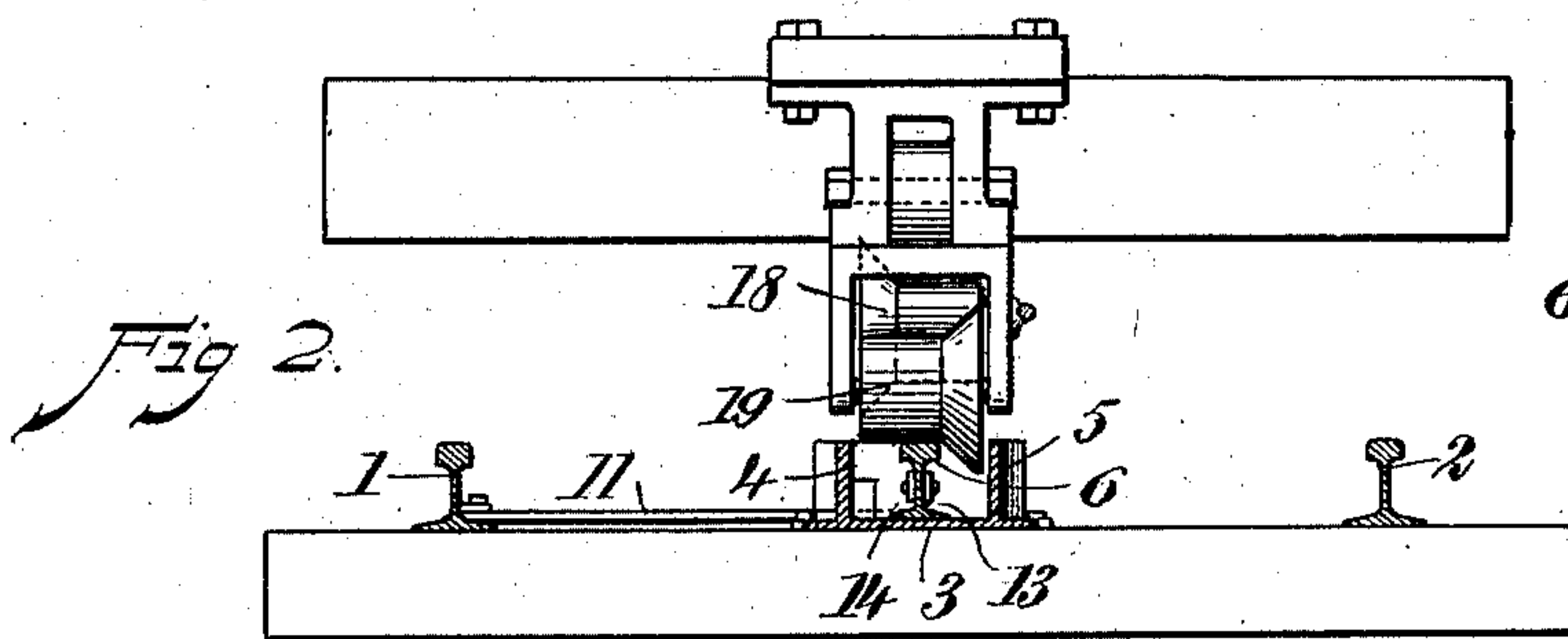
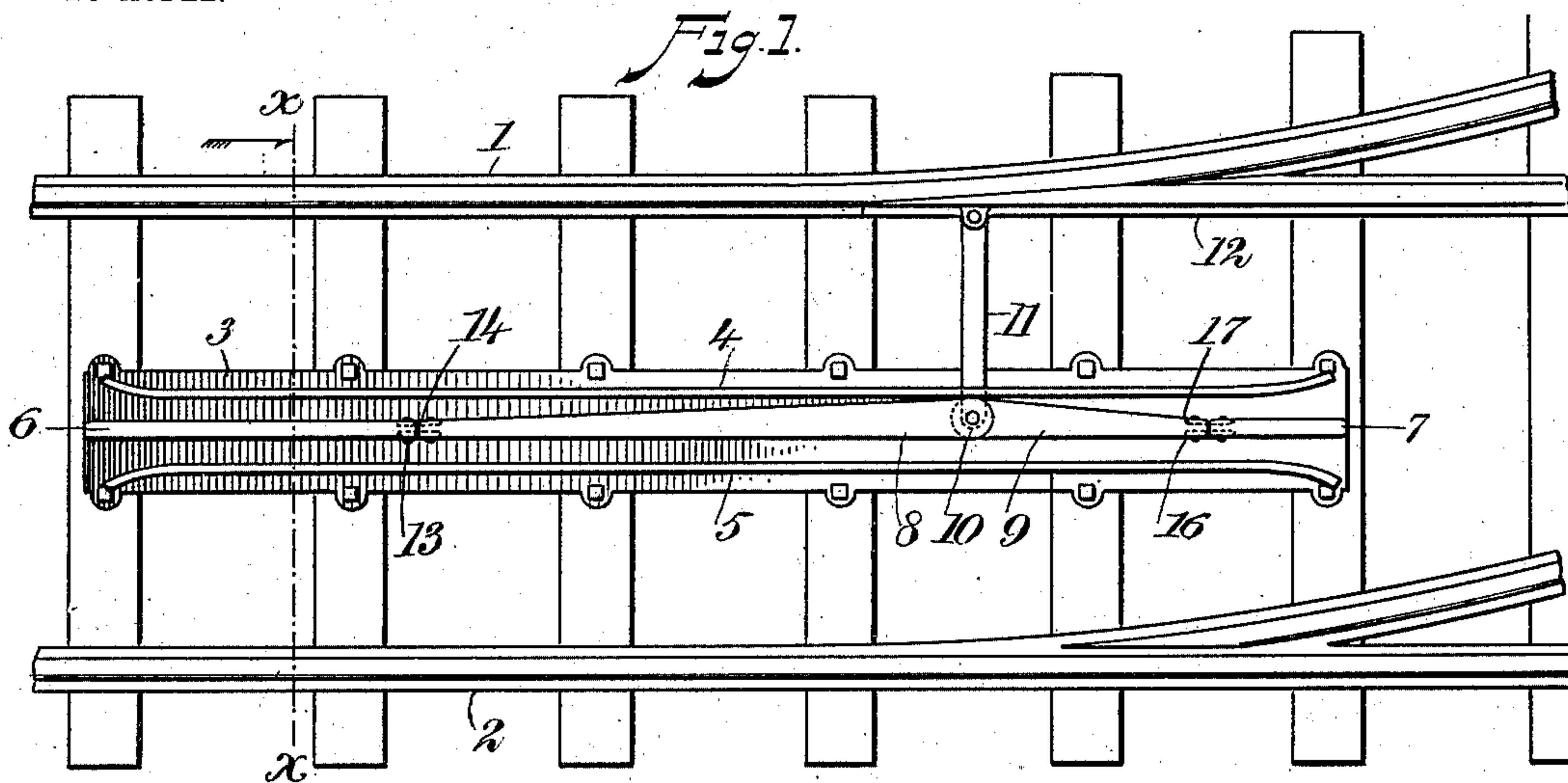
No. 752,718.

PATENTED FEB. 23, 1904.

W. K. SMITH.
RAILWAY SWITCH.

APPLICATION FILED APR. 1, 1903.

NO MODEL.



WITNESSES:

Robert Stead
C. R. Ferguson

Fig. 3.

INVENTOR
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BY *Munsie*

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UNITED STATES PATENT OFFICE.

WILBER KNIGHT SMITH, OF DENVER, COLORADO, ASSIGNOR TO THE
AMERICAN AUTOMATIC SWITCH COMPANY, OF PUEBLO, COLORADO,
A CORPORATION OF COLORADO.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 752,718, dated February 23, 1904.

Application filed April 1, 1903. Serial No. 150,570. (No model.)

To all whom it may concern:

Be it known that I, WILBER KNIGHT SMITH, a citizen of the United States, residing in the city and county of Denver, State of Colorado, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to an improvement in railway-switches of street-railways, and particularly to the means and mechanism by which the switch point or tongue may be operated from the platform of a car, all of which will more fully hereinafter appear.

The principal object of the invention is to provide a simple, economical, and efficient switch mechanism for street-railways arranged to be operated automatically by a device on a tram, electric, cable, or subway car under the control or manipulation of the driver, motorman, or conductor.

Other and further objects of the invention will appear from an examination of the drawings, and the following description and claims.

The invention consists, primarily, in switch mechanism for street-railways in which there is combined a lever pivotally secured in position between the railway-tracks connected to the switch-point and adapted to be operated by means secured to a tram, electric, cable, or subway car and under the control or manipulation of the carman.

The invention consists, further and finally, in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of one type of a railway-switch as it appears when constructed in accordance with these improvements; Fig. 2, a cross-sectional elevation of the same and a portion of the car mechanism for operating the switch, taken on line *xx* of Fig. 1 looking in the direction of the arrow; Fig. 3, a plan view of a modified form of my improvements, and Fig. 4 an enlarged detail of the pivotal joint or connection between the fixed guiding-rail and the toggle-lever mechanism.

In the art to which this invention relates it

is well known that considerable time is lost in the operation or manipulation of switches at certain points of street-railways and that considerable expense is also attached to the same in that it is usual to employ one or more men who must be there at all times to operate or move such mechanism. The principal object of this invention, therefore, is to obviate this loss of time and expense by providing simple, economical, and efficient switch mechanism which may be under the control of the car-driver, motorman, or conductor, all of which will more fully hereinafter appear.

In constructing a switch in accordance with these improvements and using the same in connection with the ordinary rails 1 and 2 of a railway-track which is arranged at the intersecting point and provided with the ordinary switch point or tongue 12 I provide for convenience a base-plate 3, having upwardly-extending guard flanges or rails 4 and 5. Arranged between these guard-flanges and preferably secured to the base-plate I fix guiding-rails 6 and 7, to which is pivotally secured a toggle-lever formed of the pivoted levers 8 and 9, having a common fulcrum-point 10 and flexibly secured, as above suggested, to the fixed guiding-rails by means of the links 13 and 14 and 16 and 17, which links have pins or rivets passed through the elongated perforations or slots 15 in the fixed guiding-rails, as shown particularly in Fig. 4.

To operate the switch-point by and during the movements of the toggle-lever, a link 11 is provided and pivotally secured to the common fulcrum-point 10 of the toggle-lever and to the switch-point, as shown in Fig. 1. As shown in this figure, this switch-point is closed to the direct or continuous movement of the car in a straight line and is swung with the toggle-levers to the upper side of the figure. All that is necessary to open the switch to the intersecting curved rails is to move the toggle-levers toward the opposite guard flange or rail, which movement may be had by any desired means connected to the platform of the car and adapted to enter between the guard flanges or rails and toggle-lever therein for

any desired direction. It will of course be understood that many kinds and types of mechanisms may be used for accomplishing this purpose; but I prefer to use the mechanism hereinafter described.

As a means for shifting the toggle or compound levers, and consequently the switch-point, I prefer to provide two trolley rolls or wheels 18 and 19, carried by any desired tram-car, each of which rolls is provided with a bevel-flange at one end thereof. These rolls are mounted in any desired frame in the car, preferably a swinging frame, and arranged to be depressed or raised in any desired manner, so that when it is depressed the bevel-flange of the roll 19, as shown in Fig. 2, will enter between the guard-rail 5 and the adjacent surface or lateral edge of the toggle-levers to shift the parts to the position shown in Fig. 1. To obtain a reversal, the roll 18, with its bevel edge, is depressed and the roll 19 raised so that the bevel-flange of the roll or wheel 18 will enter between the guard and the relatively inclined edges of the compound lever, shifting the same toward the opposite guard-rail and opening the switch-point to the curved intersecting tracks.

In Fig. 3, as above suggested, I have shown a modification of my improvements, consisting of a track, switch-point, guard flanges or rails, hereinbefore described, and but one fixed guiding-rail 6, having a single lever 20 pivotally connected thereto and forming a continuation thereof and also extending between the upwardly-extending guard flanges or rails and connected to the switch-point, substantially as shown in connection with Fig. 1, and arranged to be operated in substantially the same manner.

I claim—

1. In a railway-switch of the class described, the combination of a switch-point, the fixed guide-rail, a swinging lever in line with the fixed guide-rail, and pivotally secured thereto between the tracks and connected with the switch-point and adapted to be operated by a device on the car, substantially as described.

2. In a railway-switch of the class described, the combination of a switch-point, a fixed guiding-rail secured in position between the tracks, and a swinging lever arranged in line, and pivotally secured to the fixed guiding-rail and to

the switch-point to operate the same, substantially as described.

3. In a railway-switch of the class described, the combination of fixed guiding-rail mechanism, toggle-lever mechanism in line with, and pivotally secured thereto, and means connecting the toggle-lever mechanism with the switch-point to operate the same, substantially as described.

4. In a railway-switch of the class described, the combination of a toggle-lever, a fixed guiding-rail pivotally secured to each end thereof, a switch-point, and means connecting the switch-point and toggle-lever mechanism together to move the switch-point, substantially as described.

5. In a railway-switch of the class described, the combination of toggle-lever mechanism, fixed guiding-rail mechanism secured to each end of the toggle-lever and between the ordinary railway-tracks, link mechanism pivotally secured to the toggle-lever at or near its common fulcrum-point and to the switch-point for operating the same, substantially as described.

6. In a railway-switch of the class described, the combination of toggle-lever mechanism, fixed guard-rail mechanism secured to each end of the toggle-lever mechanism, a switch-point, a link pivotally secured to the toggle-lever mechanism at or near its common fulcrum-point and to the switch-point to operate the same, and guard rails or flanges arranged at each side of the toggle-lever mechanism, substantially as described.

7. In a railway-switch of the class described, the combination of toggle-lever mechanism, a fixed guide-rail secured to each end of the toggle-lever mechanism, a switch-point, link mechanism pivotally secured to the toggle-lever mechanism at or near its common fulcrum-point and to the switch-point, a base-plate arranged underneath the toggle-lever mechanism and provided with upwardly-extending guard flanges or rails arranged at each side of the toggle-lever mechanism, substantially as described.

WILBER KNIGHT SMITH.

Witnesses:

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