

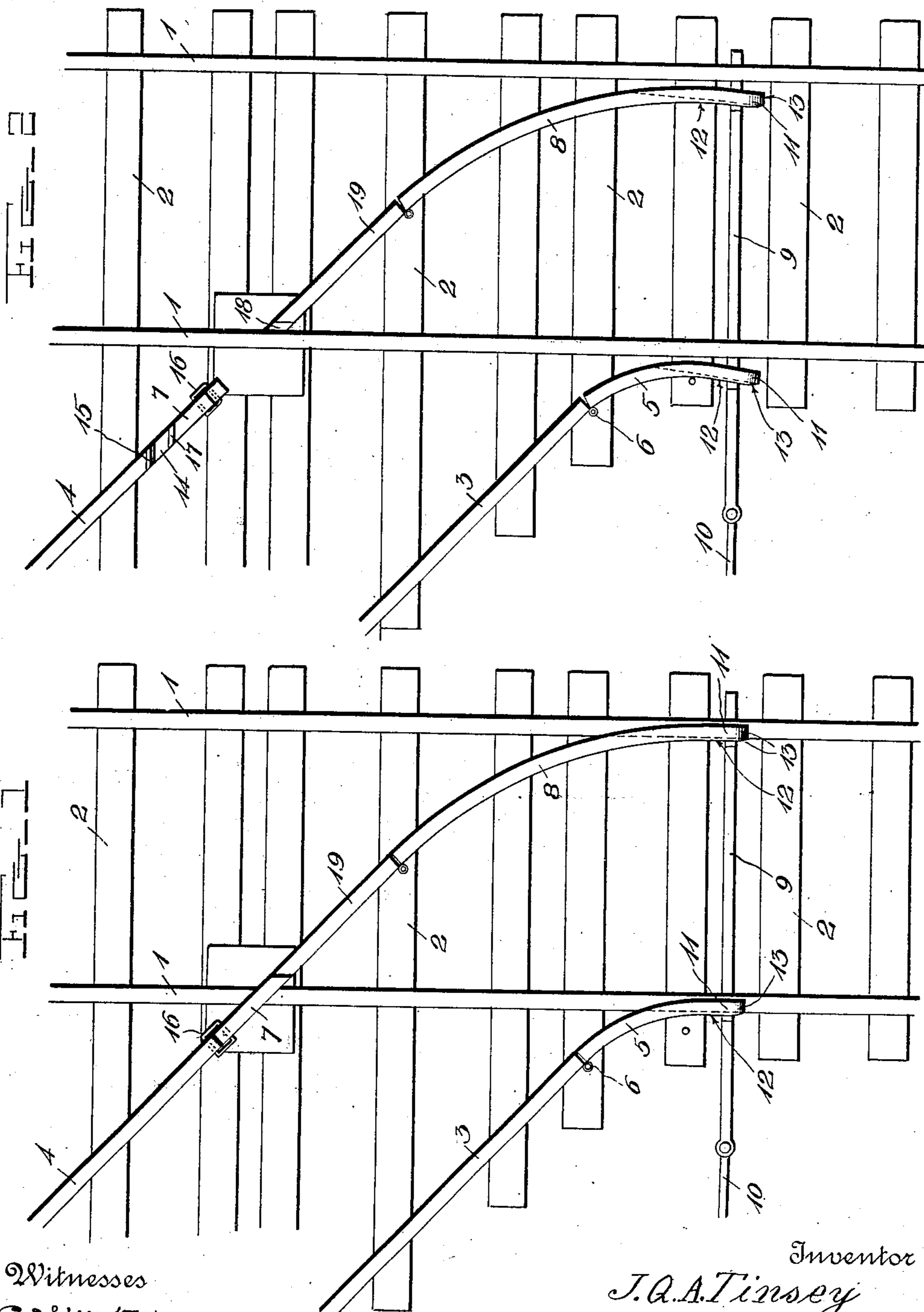
No. 898,285.

J. Q. A. TINSEY.  
SWITCH.

PATENTED SEPT. 8, 1908.

APPLICATION FILED FEB. 20, 1908.

3 SHEETS—SHEET 1.



Witnesses  
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By

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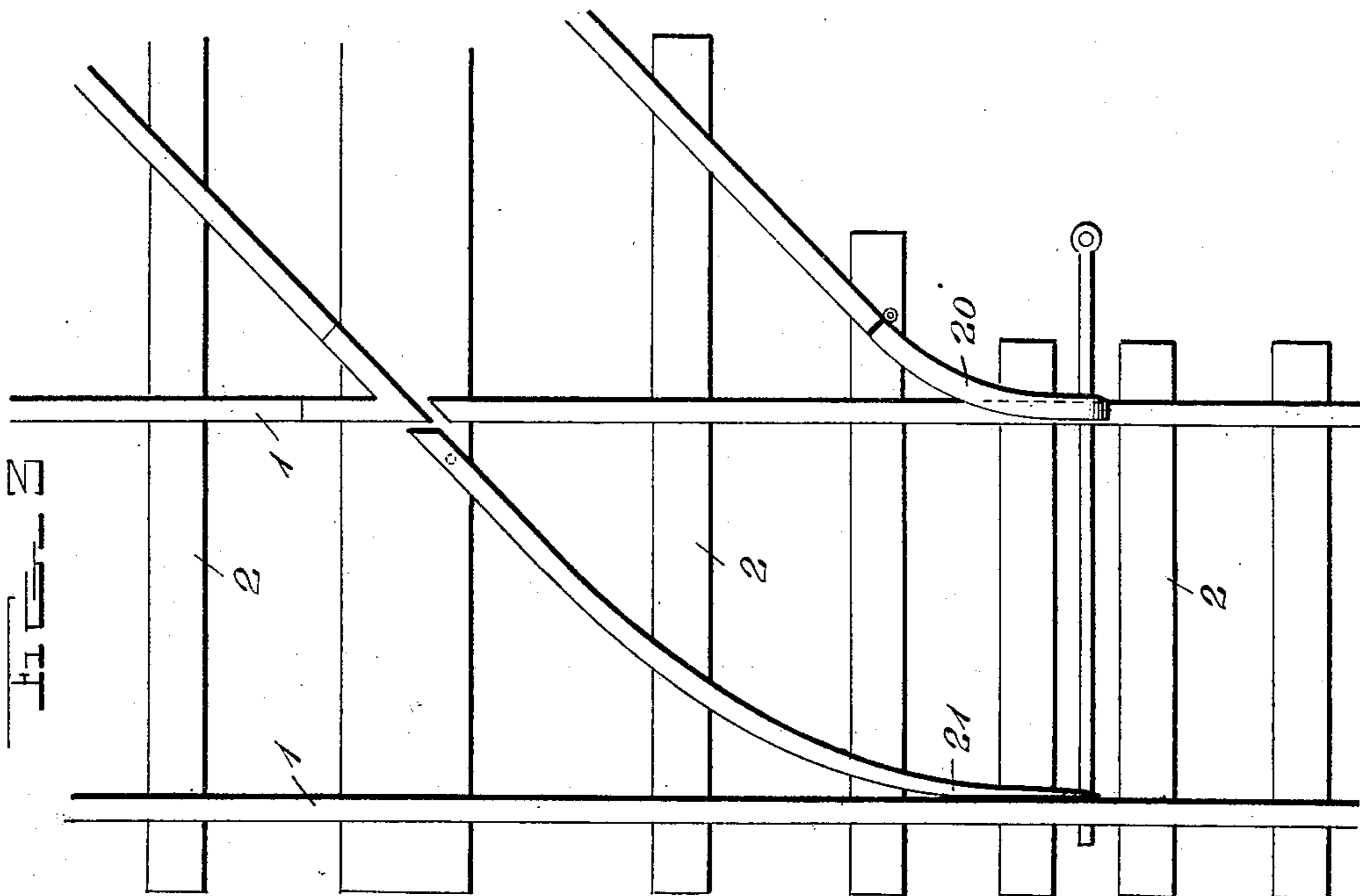
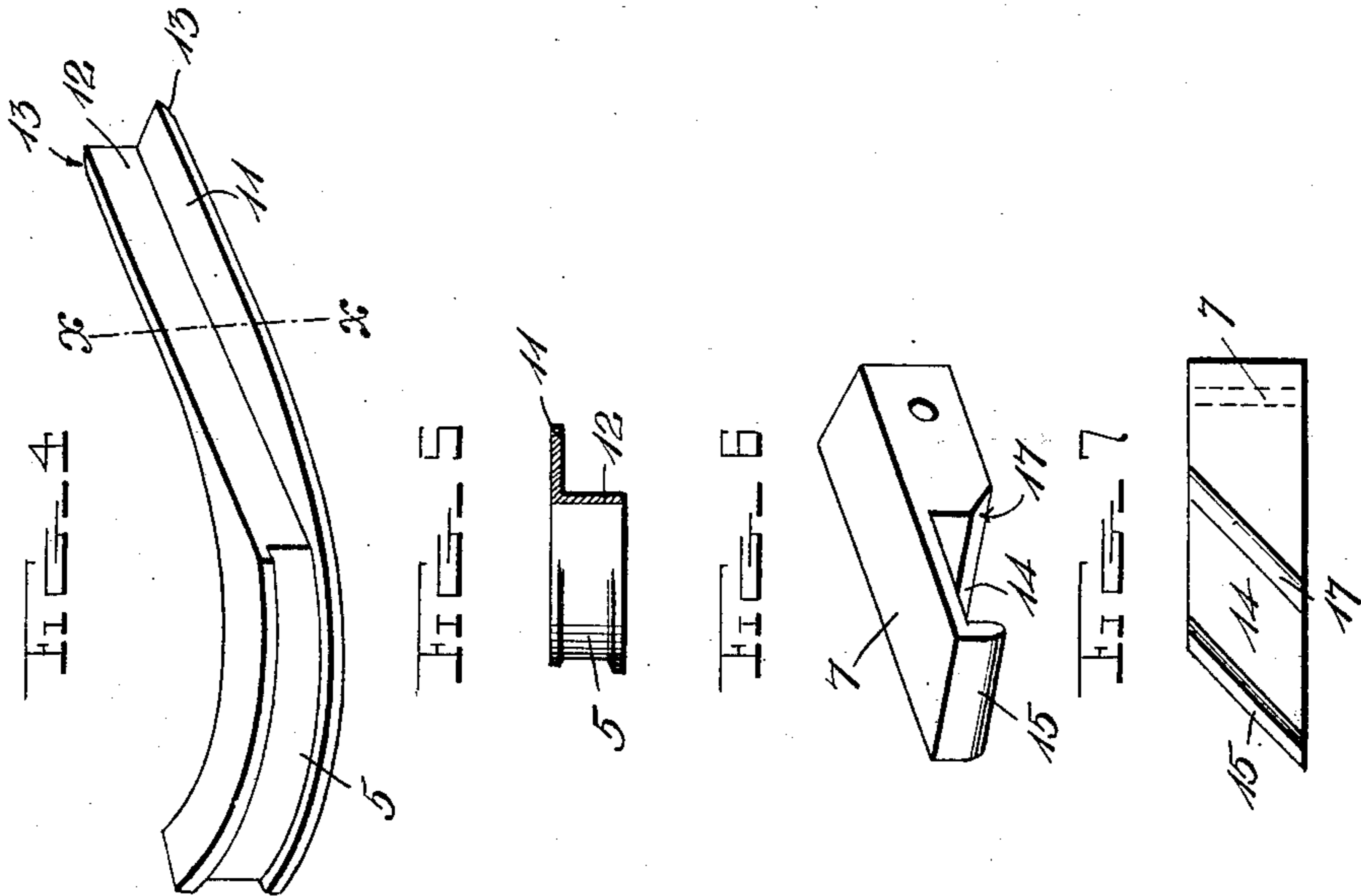
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

FIG. 8

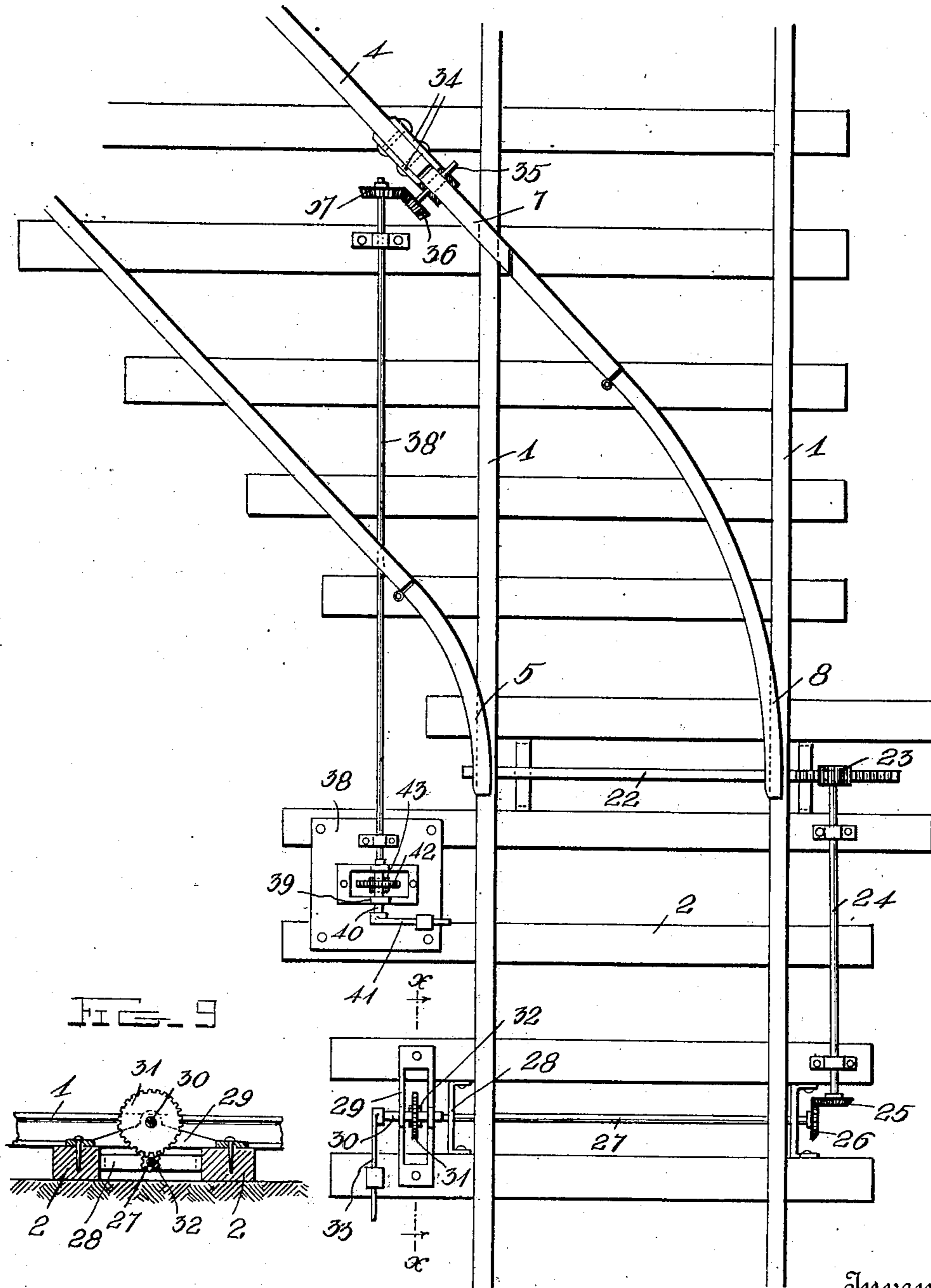
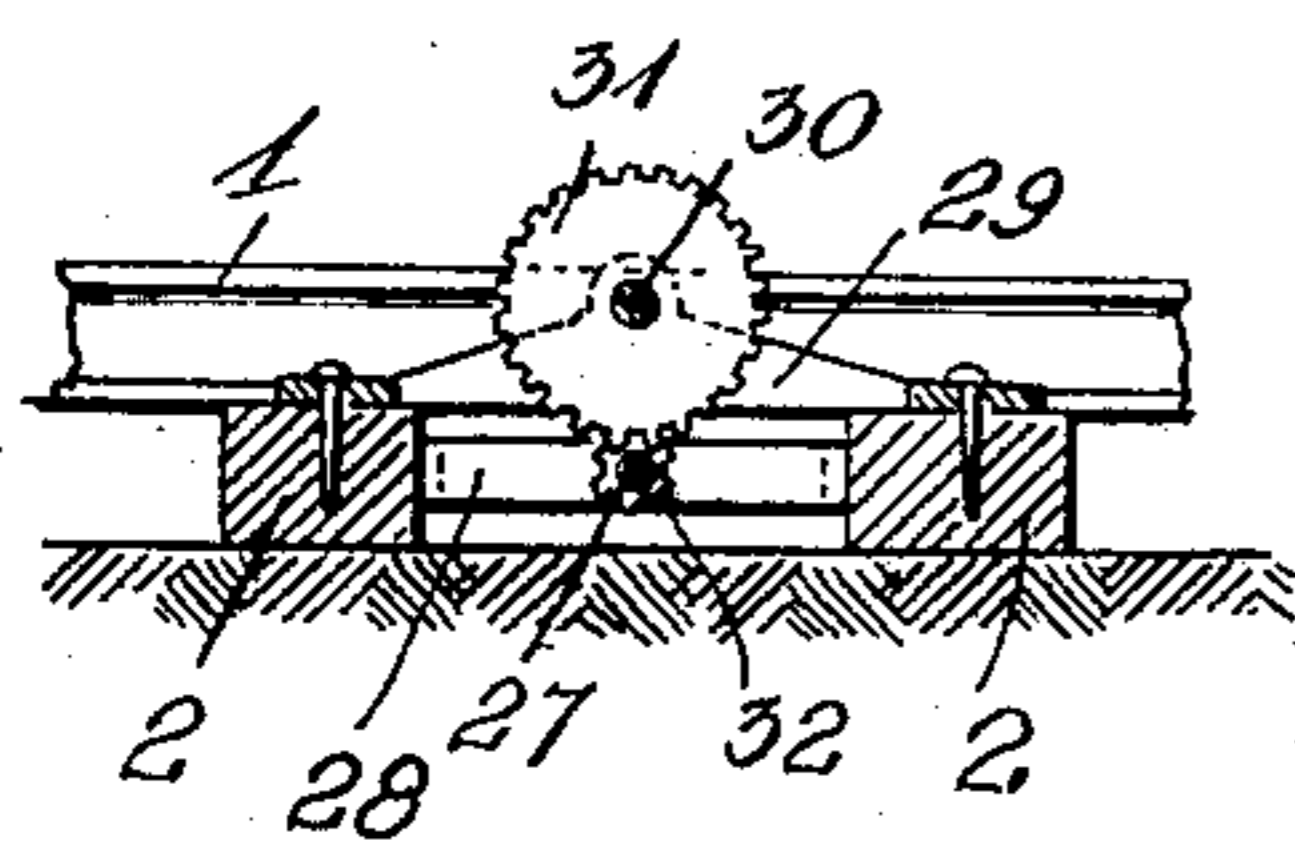


FIG. 9



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN QUINCE ADAMS TINSEY, OF TERRY, MISSISSIPPI.

## SWITCH.

No. 898,285.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed February 20, 1908. Serial No. 416,897.

*To all whom it may concern:*

Be it known that I, JOHN Q. A. TINSEY, a citizen of the United States, residing at Terry, in the county of Hinds and State of Mississippi, have invented certain new and useful Improvements in Switches; and I do 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.

My invention relates to railroad systems, and more especially to the switches and frogs used therein for the purpose of switching trains from the main line to a branch line, or vice versa.

Heretofore switches have been constructed in such a manner that the main line track at the frog was interrupted and caused a jolt or jar to the passing train, and it is the object of this invention to obviate this difficulty and to provide an unbroken main line at the switching point.

A further object is the provision of such a switch as will obviate the use of guard rails and the like.

A further object of the invention is the provision of a switch which will throw the weight received thereby onto the main line rails.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 represents a top plan view of my improved switch and frog; Fig. 2 is a similar view with the switch closed; Fig. 3 is a plan view of a modification; Fig. 4 is a detail perspective view of the switch tongue; Fig. 5 is a cross sectional view thereof on the line  $x-x$  of Fig. 4; Fig. 6 is a perspective view of the frog used; Fig. 7 is a top plan view thereof; Fig. 8 is a plan view showing the preferred form of operating the frog and tongues; and Fig. 9 is a detail section on line  $x-x$  of Fig. 8.

Referring to the drawings, 1—1, represent main line rails which may be made of any suitable type and which are mounted upon the usual cross ties, 2. Extending diagonally from the main line rails are the branch line rails, 3 and 4, the former of which is connected to the left-hand switch tongue, 5, by the hinge 6, and the latter of which has pivoted thereto a frog member 7, which will be hereinafter described. To an extension of the right-hand branch rail 4 and the frog 7 is

hinged the right-hand switch tongue, similar in outline to the switch tongue, 5, but considerably longer. A switch operating bar 9 is connected to each tongue and is provided with an operating handle, 10, so as to control the tongues in unison.

Each one of the tongues comprises a specially formed piece of stock which is solid throughout a portion of its length adjacent its hinge connection with the rail, and at the point adjacent its engaging end is made angular in formation and consists of a horizontal portion 11 adapted to overlap the main line rail and a vertical portion 12, which abuts the side of the main line rail and limits the movement of the switch tongue. Both of the branch line rails are elevated above the height of the main line rails so that the switch tongues can overlap the main line rails, and, at the same time, give a smooth running surface for the cars traveling thereover. Both tongues are beveled at their forward points, 13, to provide for an ascent onto the branch line rails from the main line.

The frog 7 consists of a specially rolled section having a cut-away portion, 14, and a flange, 15. The frog 7 is pivoted to the branch line rail 4 by a link, 16, which passes through transverse apertures in the rails and frog. One wall of the cut away portion is beveled at 17 so as to smoothly engage the main line rail 1, and the flange 15 is made so as to present a dull knife edge. The main body portion of the frog seats upon the chair which supports the rails and the flange 15 seats upon a shoulder 18 formed on the section 19 to which the tongue 8 is connected.

When it is desired to switch the train from the main rails to the branch rails, 3 and 4, the frog 7 is thrown down into place so as to overlap the main line rail with the latter seated in the depression 14, and the handle, 10 is manipulated to force the switch tongues over against the main line rails with their horizontal flanges, 11, overlapping the same. If it is desired to have the main line clear, the switch tongues are thrown to the left, as illustrated in Fig. 2, and the frog 7 assumes a position with its top lying upon the branch rail, 4. It will be seen with this position of the tongues and frogs that we have a clear unobstructed main line.

In the modification shown in Fig. 7, I have shown a right-hand turn-out with a switch tongue, 20, constructed according to my invention and used in connection with the or-

dinary frog. The opposite tongue, 21, is similar in all respects to the switch tongues now in use.

By this invention I am enabled to present  
 5 a perfectly smooth running surface over the branch line rails when the switch tongues are thrown for this purpose, and, also to obviate the necessity of cutting the main line rails for frogs and the like. This would be advan-  
 10 tageous in special work of this character, as the rolling stock is saved considerable bumps during its passage over any road. In obviating the bumping, the patrons of the road are pleased and the saving in rack and tear  
 15 on the rolling stock is immense.

In Figs. 8 and 9 I have illustrated the preferred form of operating the switch tongues and the frog, but many other forms may be resorted to without departing from the spirit  
 20 and scope of the invention. Secured to the tongues, 5 and 8, is a rack bar, 22, which is engaged by a pinion, 23, carried upon a longitudinal shaft, 24, mounted in bearings upon the ties, 2. The opposite end of the shaft is  
 25 provided with a similar pinion, 26, upon a transverse shaft, 27, which is journaled in a stud piece, 28, arranged between two ties, and adjacent a bearing box, 29, in which is journaled a stub shaft, 30, having a gear  
 30 wheel, 31, keyed thereto in position to mesh with a pinion, 32, keyed upon the shaft, 27. The outer end of the stub shaft 30 is provided with a weighted lever, 33.

From the foregoing the operation of the  
 35 switch tongues will be obvious. The mode of operating the frog, 7, involves some change in its pivotal connection with the branch rail 4, and in order to obtain a proper movement, I secure to the rail, 4, a pair of side  
 40 plates, 34, which extend beyond the end thereof and have passing therethrough a short shaft, 35, to which the tongue, 7, is keyed at its rear end. This shaft, 35, revolves loosely in the arms, 34, and has se-  
 45 cured to one end thereof a bevel pinion, 36,

in mesh with a similar pinion, 37, carried by the longitudinal shaft, 38, mounted in a bearing upon a tie and in a bearing carried by the mounting plate, 38. This mounting plate has secured to it a bearing frame, 39, in which  
 50 is journaled the stub shaft, 40, having a weighted lever, 41, and the gear wheel, 42, keyed thereto. The gear wheel 42 is arranged between the sides of the frame, 39, and meshes with a smaller pinion, 43, upon  
 55 the end of the shaft, 38. By throwing the weighted lever to one side or the other, the frog, 7, is either thrown back upon the rail, 4, or thrown over to close the branch line rail, as is shown in Fig. 8. 60

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without re-  
 65 quiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended  
 70 claim.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent, is:

A frog for railway crossings comprising a  
 75 body, a depression therein and a flange formed on one side of said depression at the end of the body, said body being pivoted to a rail and adapted to have another rail lie in the depression formed therein, said  
 80 flange resting upon the opposite section of the rail to which the frog is pivoted.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN QUINCE ADAMS TINSEY.

Witnesses:

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H. B. WOLFE.