

C. S. RUGGLES.  
RAILWAY SWITCH.

APPLICATION FILED MAY 19, 1908.

Patented Aug. 10, 1909.

2 SHEETS—SHEET 1.

930,888.

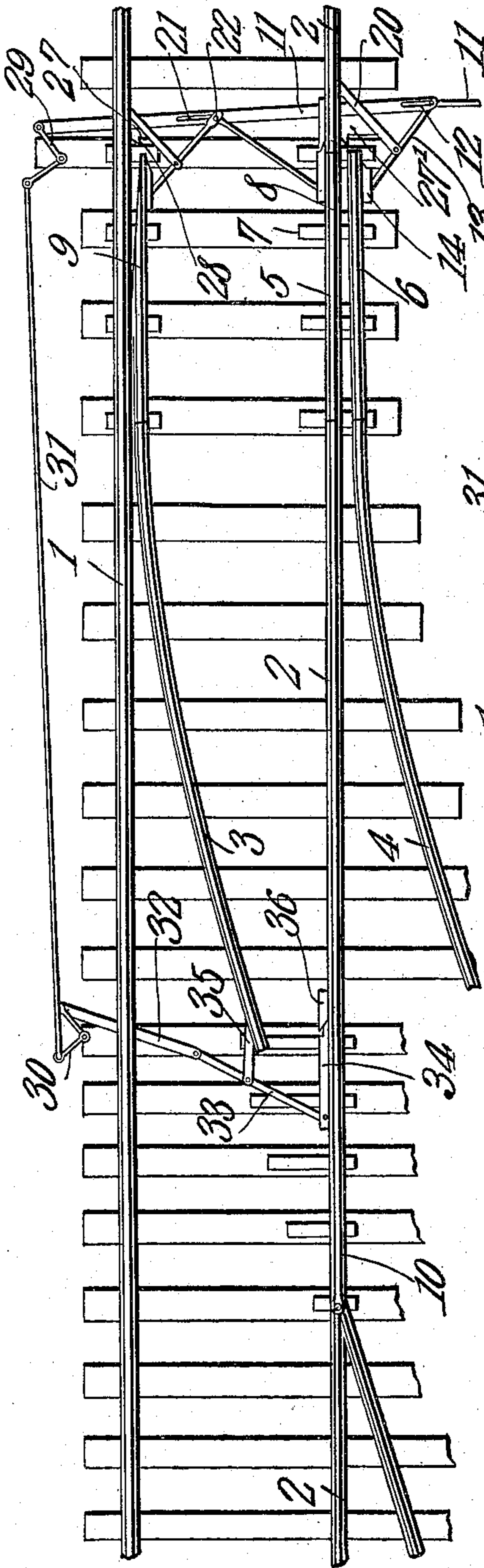


Fig. 1.

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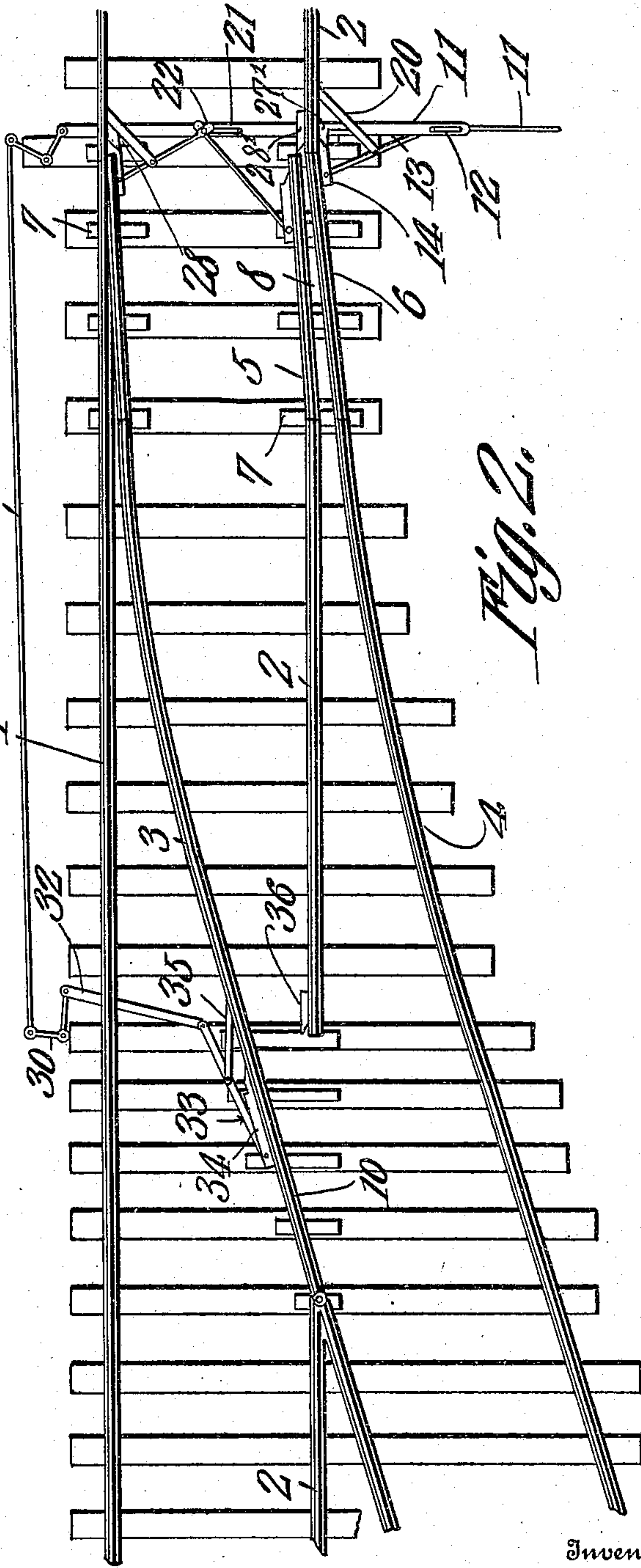


Fig. 2.

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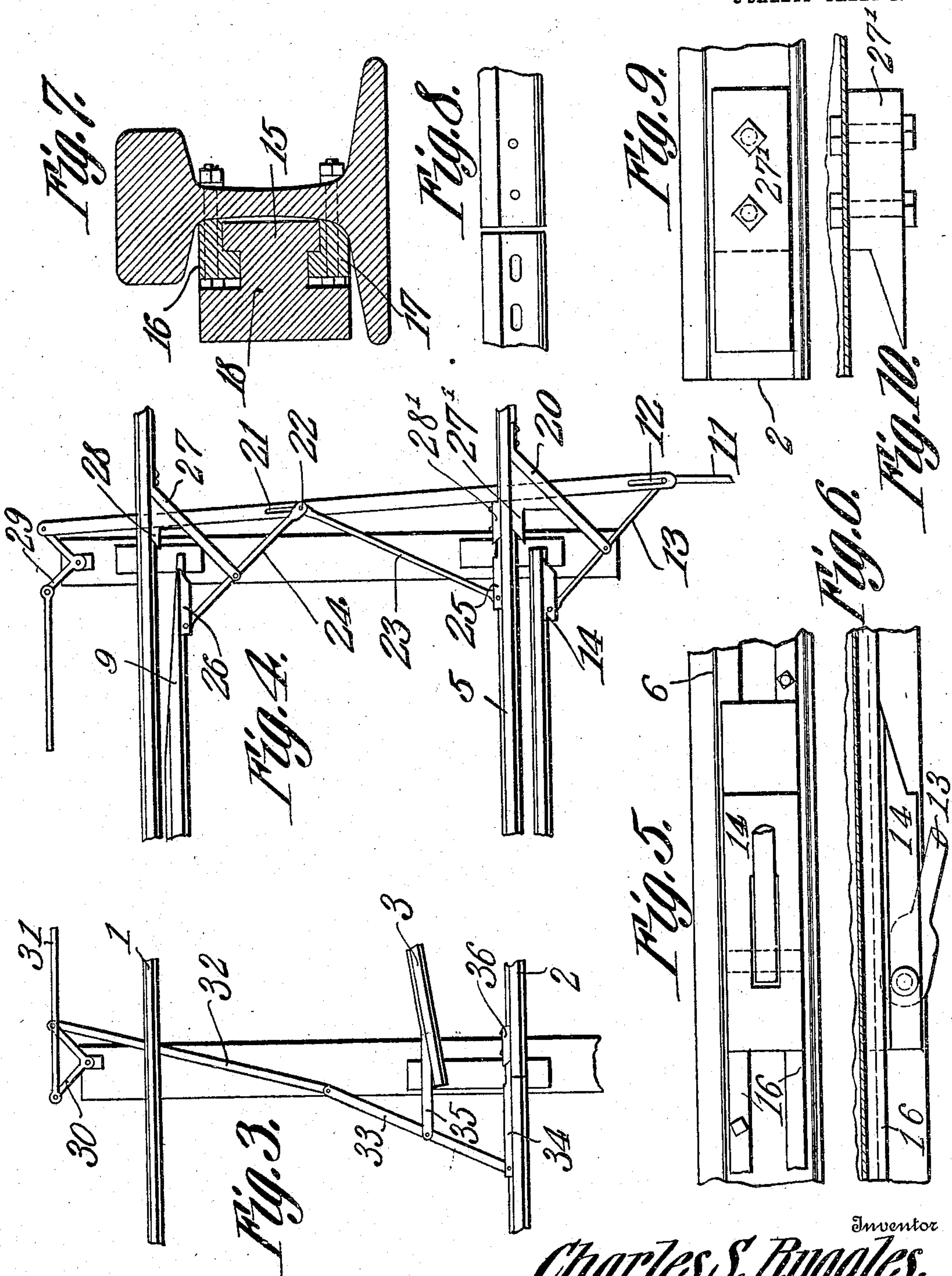
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# UNITED STATES PATENT OFFICE.

CHARLES S. RUGGLES, OF HURON, OHIO.

## RAILWAY-SWITCH.

No. 930,888.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed May 19, 1908. Serial No. 433,705.

*To all whom it may concern:*

Be it known that I, CHARLES S. RUGGLES, a citizen of the United States, residing at Huron, in the county of Erie and State of Ohio, have invented a new and useful Railway-Switch, of which the following is a specification.

This invention relates to railway switches and has for one of its objects to provide an improved structure in which provision is made for automatically and positively locking the switching rails in adjusted position.

A further object of the invention is to provide a mechanism whereby the locking device will be automatically moved to release position by the same mechanism that is employed for shifting the switch rails.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel details of construction and arrangement of parts, as will be more fully hereinafter described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a plan view of the switch set for the main or through line. Fig. 2 is a similar view of the switch set for the siding. Fig. 3 is a detail view of a portion of the secondary or auxiliary switch and its locking mechanism. Fig. 4 is a similar view of a portion of the main switching mechanism. Fig. 5 is a side elevation of one of the locking bolts. Fig. 6 is a plan view of the same. Fig. 7 is a detail cross section drawn to an enlarged scale and showing one of the rails, a bolt and the bolt guides. Fig. 8 is a detail view of a portion of a main line rail and a switch rail. Fig. 9 is a side elevation of one of the bolt keepers. Fig. 10 is a plan view of the same.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The main line rails 1 and 2 and the side line rails 3 and 4 are arranged in the usual manner.

The main switch comprises a pair of pivoted rails 5 and 6 and a switch point 9, the latter being of the ordinary type and pivot-

ally connected as usual to the end of the siding rail 3. The two switch rail members 5 and 6 are arranged to slide laterally on the metallic plates 7 and are pivotally connected respectively to the rails 2 and 4 while the free ends of said rails are preferably connected for mutual movement by means of a block 8 and suitable connecting bolts.

The auxiliary or secondary switch member 10, more specifically referred to hereinafter, is pivotally connected at the juncture of the rail 2 and the adjacent siding rail 3 and may swing between the positions indicated in Figs. 1 and 2 for the purpose of forming a continuous rail for the main line or for the siding without the employment of the usual frog.

Arranged under the main rails at a point adjacent the free terminals of the main switching members is a switch bar 11 that is arranged to move in the direction of its length and is also free for slight lateral play. Near one end of the switch bar is a longitudinally disposed slot 12 with which engages a pin or bolt carried by one end of a lever 13 that is fulcrumed at a point intermediate its ends to a rigid bracket 20 that is bolted or otherwise secured to one of the permanent main line rails 2. The opposite end of the lever 13 is pivotally connected to a slidable locking bolt 14 that is carried by the switch rail 6. The construction of this bolt is best shown in Figs. 5, 6 and 7, the bolt having a tapered keeper engaging portion and being substantially T-shaped in cross section, its web 18 fitting between a pair of grooved guide plates 16 that are bolted or otherwise secured to the web of the rail, the main web 18 of the bolt having an enlarged head 15 that fits within the groove of the guide bars. The bolt is arranged to engage with a keeper 27' that is permanently secured to the main rail 2 as shown more clearly in Figs. 9 and 10.

The switch operating bar 11 is further provided with a longitudinally disposed slot 21 that is arranged to receive a pin 22 that also forms a pivotal connection between the adjacent ends of a pair of links 23 and 24, the opposite ends of said links engaging respectively with bolts 25 and 26 one of which is carried by the switch rail 5 and the other by the switch point 9. The bolt 26 is arranged to engage with a keeper 28 and the bolt 25 with a corresponding keeper 28'. The link 24 is pivotally mounted at the outer end of a



bracket 27 that is permanently secured to the main line rail 1 and really forms a lever to assist in the movement of the other link 23.

The operation of the device as thus far described and assuming the parts to be in the position shown in Fig. 1 and to be moved to the position shown in Fig. 2; an outward pull on the switch bar together with a slight movement of the handle end of the bar toward the left of Fig. 1 will operate on all of the members 13, 23 and 24 and will shift the locking bolt 25 out of engagement with its keeper 28', and on continuing the movement the switch members 5, 6 and 9 will be moved to the positions shown in Fig. 2, thus shifting the switch. During the initial part of this movement the pin at the ends of the members 13 and 24 will be at that end of the slots 12 and 21 nearest the siding, but as the movement continues the bar will ride independently of the pins until the latter are caught against the opposite ends of the slots and then the continuation of the movement will operate on the members 13 and 24 to shift the locking bolts 14 and 26 into engagement with the keepers 27' and 28 thus locking the switch members in the newly adjusted position. The return movement is accomplished in a similar manner by an endwise thrust on the switch bar.

The extreme outer end of the switch bar is connected to one arm of a bell crank lever 29 arranged at a point outside the rails and the opposite arm of the bell crank lever is connected to one arm of a bell crank lever 30 by means of a rod 31. The second arm of the bell crank lever 30 is connected to one end of a link 32 and the inner end of the link is connected to one end of a lever 33 that is centrally pivoted to the end of a rigid bracket 35 that is carried by the siding rail 3. The lever 33 is connected to one end of a slidable locking bolt 34 carried by the auxiliary rail 10 and which is arranged to interlock with a keeper 36 carried by the main line rail 2. When movement is transmitted through the bell crank levers to the link 32 for the purpose of forcing the link 32 inward the lever 33 will be swung around on its fulcrum and will withdraw the locking bolt 34 from the keeper 36 and as the movement continues the auxiliary switch rail 10 will be moved from the position shown in Fig. 1 to the position shown in Fig. 2 in order to complete the straight line to the siding. Movement in the contrary direction will force the switch rail 10 back again to the position shown in Fig. 1.

Having thus described the invention what is claimed is:—

1. A railway switch, embodying fixed and movable main and siding rail sections, guides secured to the movable sections, locking bolts slidably mounted in said guides, keepers secured to the fixed rail sections, and means for simultaneously moving the locking bolts into and out of engagement with the keepers.

2. In a railway switch, including fixed and movable rail sections, slidable locking bolts carried by the movable rails, keepers carried by the fixed rails, and an operating connection operating on the several bolts to move them from engagement with the keepers and then operating through the bolts on the movable rails to shift the latter.

3. In a railway switch, embodying fixed and movable rail sections, locking bolts carried by the movable rails, keepers carried by the fixed rails, a switch operating bar, and connections extending from the bar to the several bolts whereby the bolts are first moved to a releasing position and then the movable rails shifted and the bolts again moved to lock the movable rails in the newly adjusted positions.

4. A railway switch, comprising a main line and siding rail members, a switch rail section pivoted to the point of intersection of the main and siding rail members, a locking bolt slidably mounted on said pivoted section, means for actuating said bolt and operating through the same to move said section into alinement with either the main line or siding rail members, and a keeper with which said locking bolt engages.

5. In a railway switch, the combination of fixed and movable rail sections, an operating bar disposed transversely of the same and provided with longitudinal slots, keepers on the fixed rail sections, brackets projecting from said fixed sections, slidable locking bolts on the movable rail sections adapted to engage the keepers, and levers pivoted intermediate their ends on the said brackets and having their opposite ends respectively pivoted to the bolts and carrying pins engaging the slots in the operating member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES S. RUGGLES.

Witnesses:

HARRY A. COOK,  
W. R. TYLER.