

(No Model.)

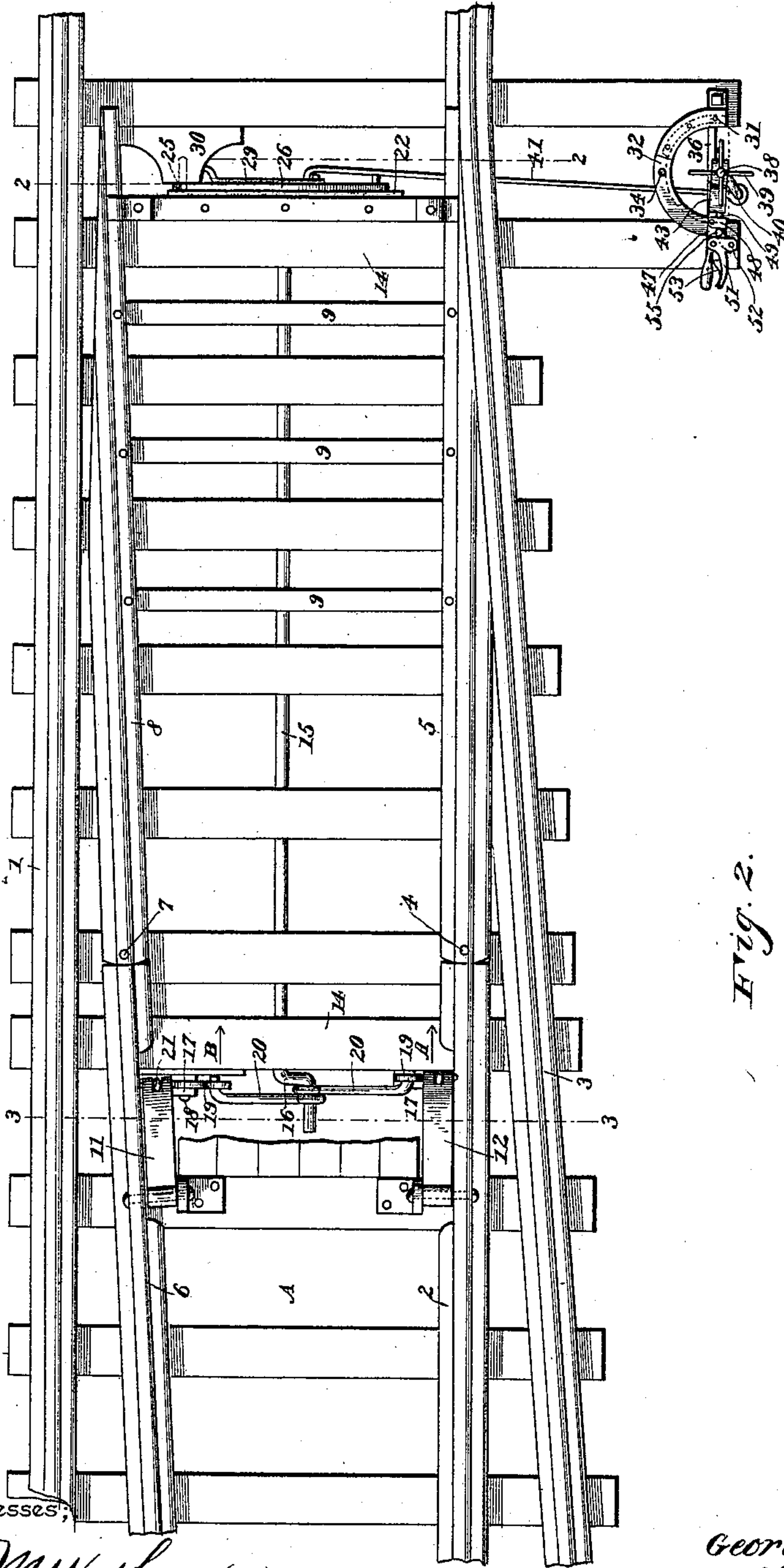
2 Sheets—Sheet 1.

G. SAALMILLER.  
RAILWAY SWITCH.

No. 486,126.

Patented Nov. 15, 1892.

Fig. 1.



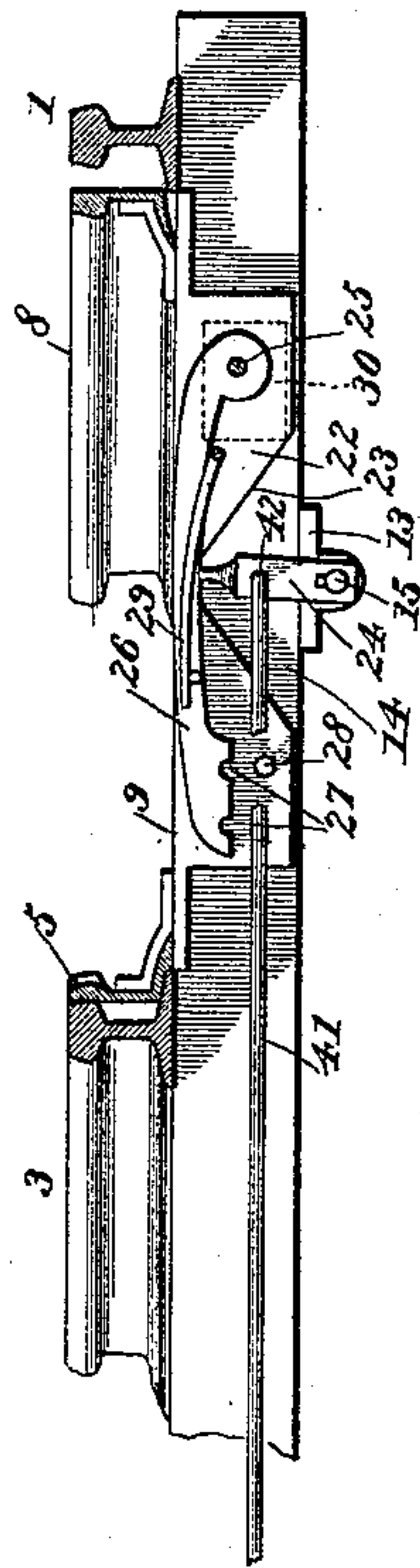
Witnesses,

*J. M. Withers*  
*W. S. Duval*

By *his* Attorneys,

*C. A. Snow & Co.*

Fig. 2.



Inventor

*George Saalmiller,*

(No Model.)

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Fig. 3.

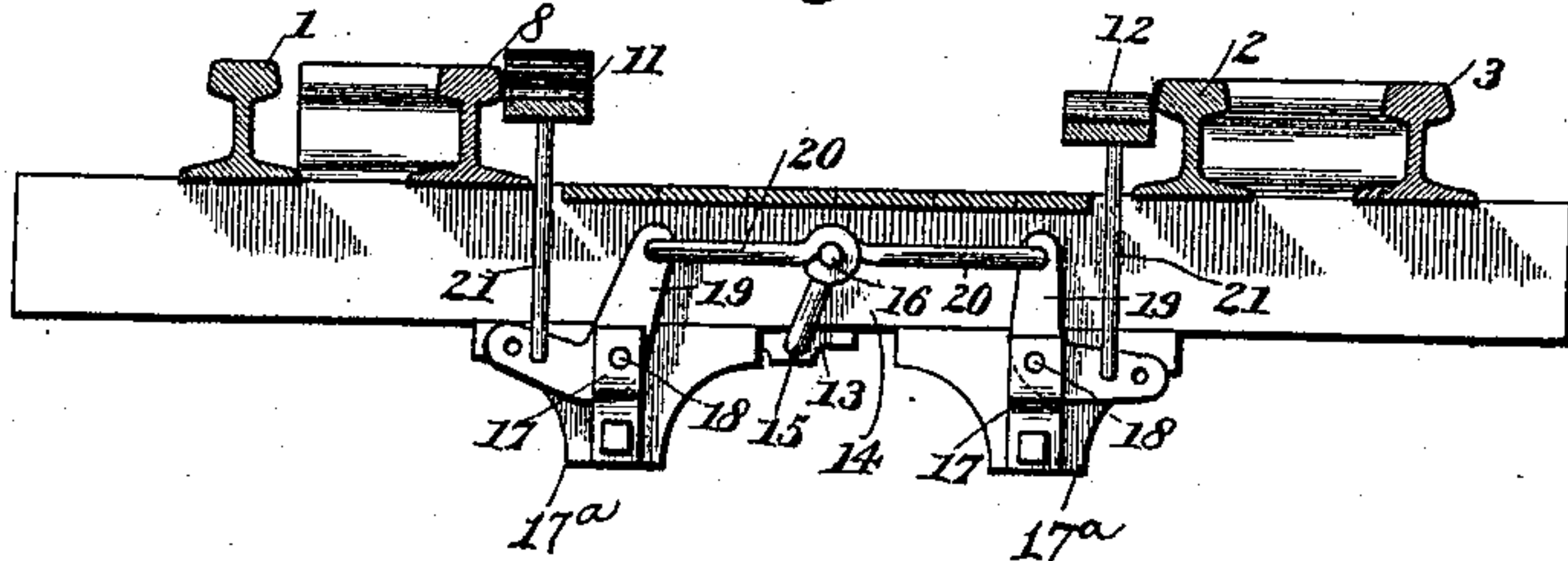
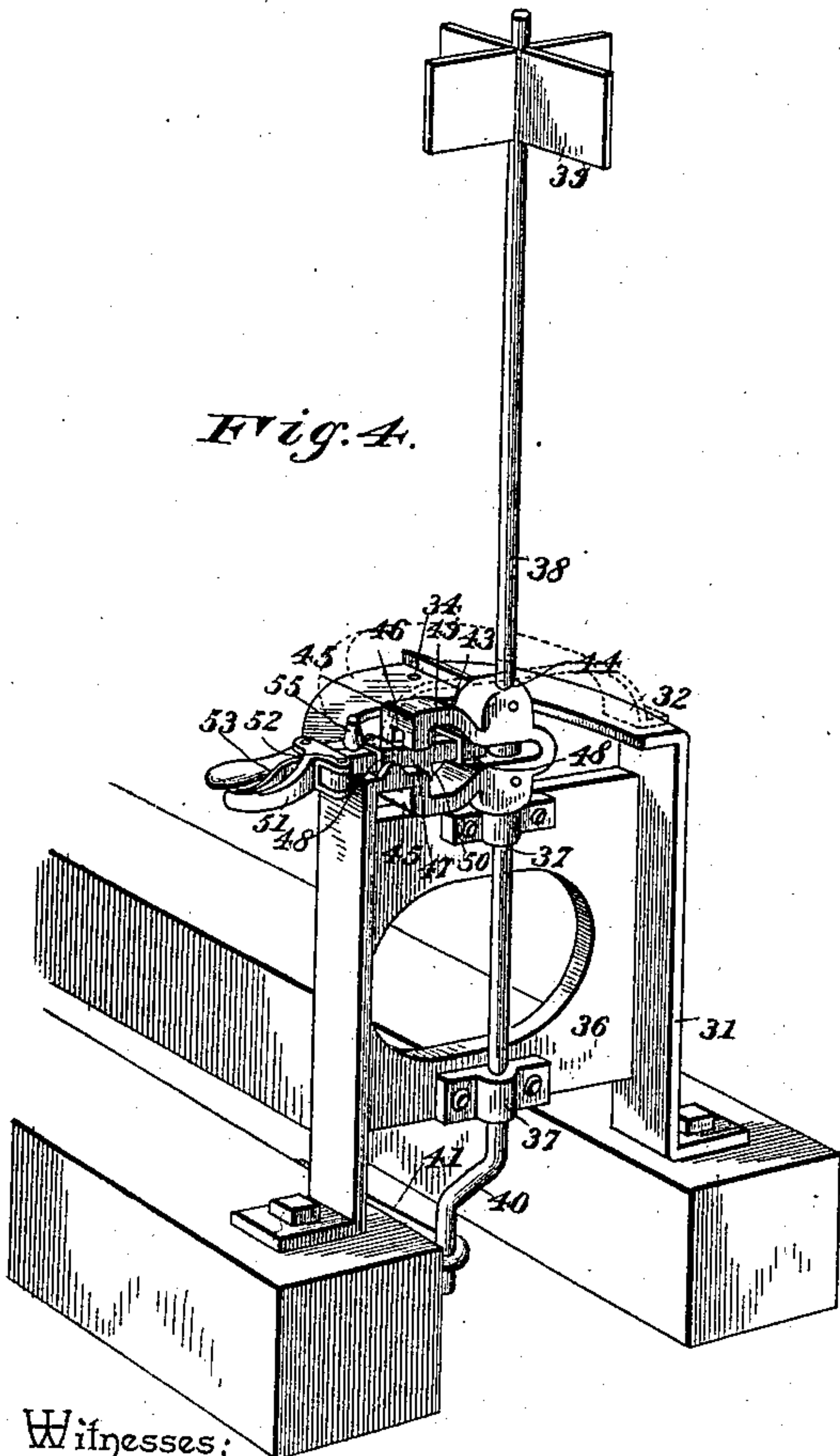


Fig. 4.



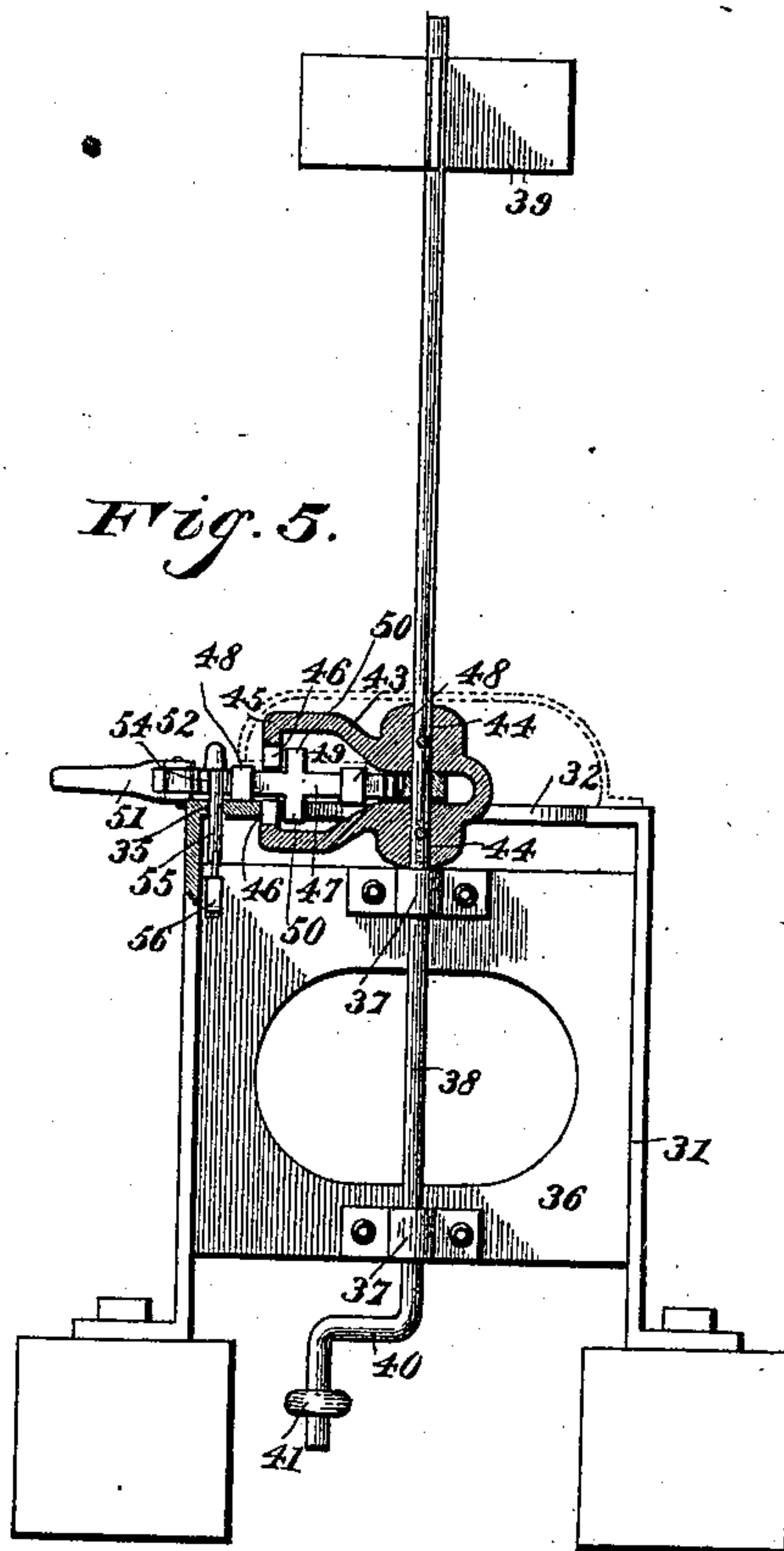
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Fig. 5.



Inventor

*George Saalmiller*



# UNITED STATES PATENT OFFICE.

GEORGE SAALMILLER, OF SOUTH CHICAGO, ILLINOIS.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 486,126, dated November 15, 1892.

Application filed January 12, 1892. Serial No. 417,869. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE SAALMILLER, a citizen of the United States, residing at South Chicago, in the county of Cook and State of Illinois, have invented a new and useful Railway-Switch, of which the following is a specification.

This invention relates to improvements in switches; and the objects and advantages of the invention, together with the novel features thereof, will hereinafter appear, and be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of a switch embodying my invention. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3 of Fig. 1. Fig. 4 is a perspective in detail of the switch-stand. Fig. 5 is a vertical section of the same.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 2 designate the main-track rails, the latter terminating at the inner side of the side rail 3 and having pivoted at 4 to its end the main switch-rail 5, adapted to be thrown outwardly toward and against the side rail 3, whereby the side rail merges into the main-track rail and, as shown, is curved gradually for this purpose. At the inner side of the opposite main rail 1 and curved parallel to the side rail 2 is the inner side rail 6, which terminates opposite the termination of the main side rail 2, and has pivoted thereto at 7 a side switch-rail 8, adapted to be swung outwardly against and merge into the rail 1 of the main line. The rails 8 and 5 are connected at intervals by connecting-bars 9, as is usual, and the series of rails secured to ordinary cross-ties, as shown.

In front of the terminals of the side and main rails 6 and 2, respectively, is journaled or pivoted in suitable bearing-brackets a pair of treads 11 and 12, the former lying against the inner side of the side-track rail 6 and the latter being located at the inner side of the main rail 2, and each adapted to project above or below the upper surfaces of their rails, so as to be influenced or not to be influenced by the passing train.

In bearings 13, located upon the under sides of two cross-ties 14, located in front and in rear of the switch-rails, the former tie being

immediately in rear of the free ends of the treads 12 and 11, there is journaled a rock-shaft 15, the ends of which extend beyond the same, the front end being bent to form a crank 16. Bearing-blocks 17<sup>a</sup>, located at opposite sides of the rock-shaft 15 at the rear end of the same and secured to that cross-tie 14 supporting the bearing-block 13, have secured thereto brackets 17, and in each bracket there is fulcrumed at 18 bell-crank levers 19. Links 20 are loosely connected at their inner ends to the crank 16 of the rock-shaft 15, while short links 21 are connected at their lower ends to the outer ends of the said bell-cranks and at their upper ends to the treads 11 and 12, so that, as will be obvious, a depression of a tread will cause an oscillation of the rock-shaft and a consequent elevation of the companion tread.

To the under side of the rear cross-bar 9 of the series there is bolted a plate 22, having an inverted-V-shaped recess 23 formed in its under side. A shifting-arm 24 is mounted on the rear end of the rock-shaft 15 and at its upper end is adapted to operate against the inclined sides of the recess 23, so that, as will be obvious, as the rock-shaft 15 is oscillated or partially rotated in either direction the shifting-arm operating against the opposite inclined sides of the recess 23 will serve to laterally move the two switch-rails 5 and 8, thus throwing them either to the main or side rails.

Pivoted at 25 to an adjacent cross-tie is a latch 26, the same extending across the face of the block or plate 22 and provided near its free end and upon its under edge with a pair of notches 27, either of which may engage a pin 28, extending from the rear face of the plate 22, and thus when in such position serve to lock the switch-rails against lateral movement. The latch is depressed by means of a spring 29, which extends from the block 30, to which the latch is pivoted, said block projecting from the cross-tie, so as to bring the latch close to the face of the plate.

Bolted to the outer ends of a pair of extra long cross-ties, to which the mechanism just described is connected, is an inverted-U-shaped switch-stand 31, the upper end of which is provided with a semicircular lock-



ing-plate 32, provided with a perforation 34 at its center and a corresponding perforation 35 at its ends. A cross-piece 36 connects the opposite terminals or sides of the stand-frame, and bearings 37, concentric with the locking-bar 32, are formed thereon. A target shaft or rod 38 is mounted in the bearings and rises above the stand, where it is provided with the usual signals 39. The lower end of the rod 38 is laterally bent to form a crank 40, and a switch-rod 41 is loosely connected at its outer end to the crank and at its inner end is pivotally connected, as at 42, to the shifting-arm 24, so that movement of the arm is communicated from the switch-bar to the target shaft or rod 38.

A U-shaped locking-frame 43 has openings 44 formed in its opposite terminals, and through said openings passes the target shaft or rod 38, said shaft or rod being rigidly connected to the locking-frame. The U-shaped frame 43 has its terminals slightly spaced apart and inwardly bent, as at 45, the edges of the terminals being correspondingly recessed, as at 46. A hand-lever 47 is embraced loosely between the terminals of the V shaped locking-frame and is loosely or pivotally connected with the target shaft or rod. This lever is provided with a pair of keepers 48, extending from one side, and in the same is mounted for sliding a T-shaped bolt 49, the bolt having lateral branches 50. A bell-crank 51 is pivoted, as at 52, to the bolt, and a spring 53 serves to separate the free end of the lever 47 from the bell-crank, the said end and bell-crank being given an external shape, adapting them to conform to the hand. It will be obvious that by grasping the lever and operating the bell-crank the bolt will be drawn to the front and its lugs 50, which normally remain in rear of the bent ends 45 of the locking-frame, will be drawn into engagement with the said ends by entering the recesses 46 thereof. Thus the lever and target shaft or rod may be rigidly locked together, so that any movement upon the part of the lever will be communicated to the rod, and hence to the switch. A perforation 54 is formed in the lever 47, and a pin 55 may be passed through the perforation 54 and either one of the perforations 34 and 35 of the curved locking-bar of the target-stand, so that the lever will be locked at any point mentioned, yet at the same time the target-shaft is free for movement when actuated by the trains passing over the treads, hereinafter explained. A padlock 56 may be connected to the lower end of the pin, and thus the lever locked against movement by unauthorized persons.

The operation of the switch will be obvious from the foregoing description, but may be briefly stated as follows: A train being on the sidetrack and wishing to regain the main line, the switch being open, proceeds along in the direction of the arrow A upon the rails 6 and 3, and its wheels operating upon the tread 11 depress the same. A depression of the tread

11 causes a swinging or partial rotation of the rock-shaft 15 to the left, such movement likewise swinging the shifting-lever 24. The movement of the shifting-lever elevates the free end of the latch from its engagement with the pin 28 and swings the pivoted switch-rails 8 and 5 to the left, the former switch-rail closing against the rail 1 of the main line. It will now be obvious that a train may pass safely from the side track to the main line or from the main line to the side track. Now supposing the switch to be open, as left by the train passing from the side track to the main track, and supposing a train to be traveling upon the main line in the direction of the arrow B, the trucks or wheels thereof would come in contact with the now-elevated tread 12 and actuate the same, thus causing simply a reversal of what I have previously described, so that the switch-rail 5 will be swung against the rail 3, and the switch-rail 8 will be swung away from the rail 1. Thus the main track is clear. It will also be seen that the proper signals will be displayed in accordance with the condition of the tracks. During the operations of the switch-rails through the medium of the treads the target-shaft will freely oscillate to display the proper signals, while the lever 47 remains fixed. When desired to adjust the switches for the purpose of side-tracking a train, the same is accomplished through the medium of the lever, which must first be unlocked by the switchman or tender and shifted for this purpose.

The novel features contained in the switch-stand are not herein claimed, but form the subject-matter of a separate contemporaneously-pending application filed August 8, 1892, and bearing Serial No. 442,501.

Having described my invention, what I claim is—

1. The combination, with the side and main rails and their switches, of a connecting-bar for the switches, a plate secured to the under side of the bar and provided with an inverted-V-shaped recess, a rock-shaft extending under the plate, a shifting-arm secured to the rock-shaft and having its upper end taking into and adapted to operate against the opposite sides of the recess, treads pivoted at the sides of the rails, and connections between the treads and rock-shaft, substantially as specified.

2. The combination, with the main and side rail, the switch-rails and the bar connecting the same, of the plate secured to the under side of said bar and having an inverted-V-shaped recess, a rock-shaft terminating under the cam-recess, means for oscillating the rock-shaft, and a shifting-arm extending from the rock-shaft and taking into the recess, substantially as specified.

3. The combination, with the side, the main rails, and the switch-rails, of the bar connecting the switch-rails, the recessed plate, the latch pivoted to the face of an adjacent tie opposite the plate and provided with inner



and outer notches, a pin extending from the plate and adapted to be engaged by the notches, a rock-shaft extending under the plate, a shifting-arm extending from the rock-shaft and into the recess of the plate and under the latch, and means for operating the rock-shaft, substantially as specified.

4. The combination, with the main rails, the switch-rails, the side rails, and the bar connecting the same, said rails being arranged as described, of the plate having the inverted-V-shaped recess, said plate being bolted to the bar, the rock-shaft extending under the plate, the shifting-arm mounted on the rock-shaft and extending into the recess of the plate, said plate being provided with a pin, a locking-latch pivoted opposite the plate and adjacent thereto and provided with inner and outer notches, either of which is adapted to engage

the pin in accordance with the position of the switch-rails, a crank located at the opposite end of the rock-shaft, opposite bell-crank levers located at opposite sides of the crank of the rock-shaft, links connecting the inner ends of the bell-crank levers with the crank of the rock-shaft, treads pivoted at the sides of the inner side rail and the inner main rail, and links connecting the treads with the outer ends of the bell-crank levers, substantially as specified.

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

GEORGE SAALMILLER.

Witnesses:

JOSEPH H. SCHLUND,  
LOUIS A. FREY.