(No Model.)

2 Sheets—Sheet 1.

G. W. McGEE.

RAILROAD SWITCH.

No. 581,761. Patented May 4, 1897.

FIG. 1.

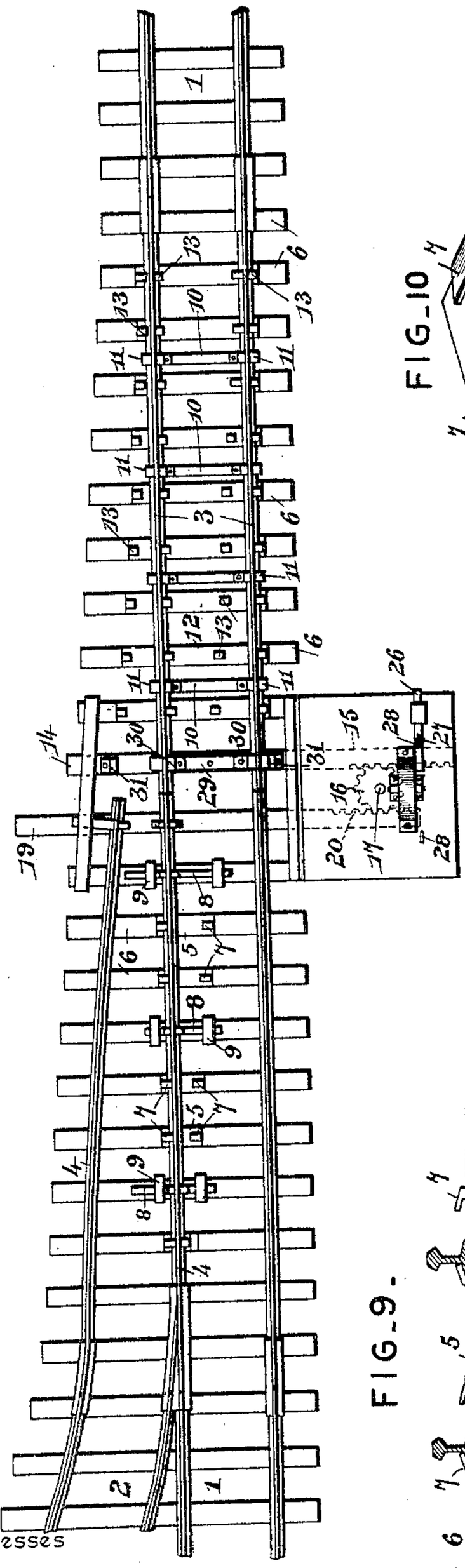


FIG. 10

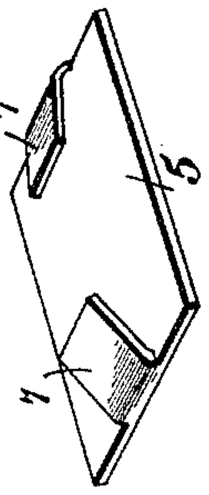


FIG. 2.

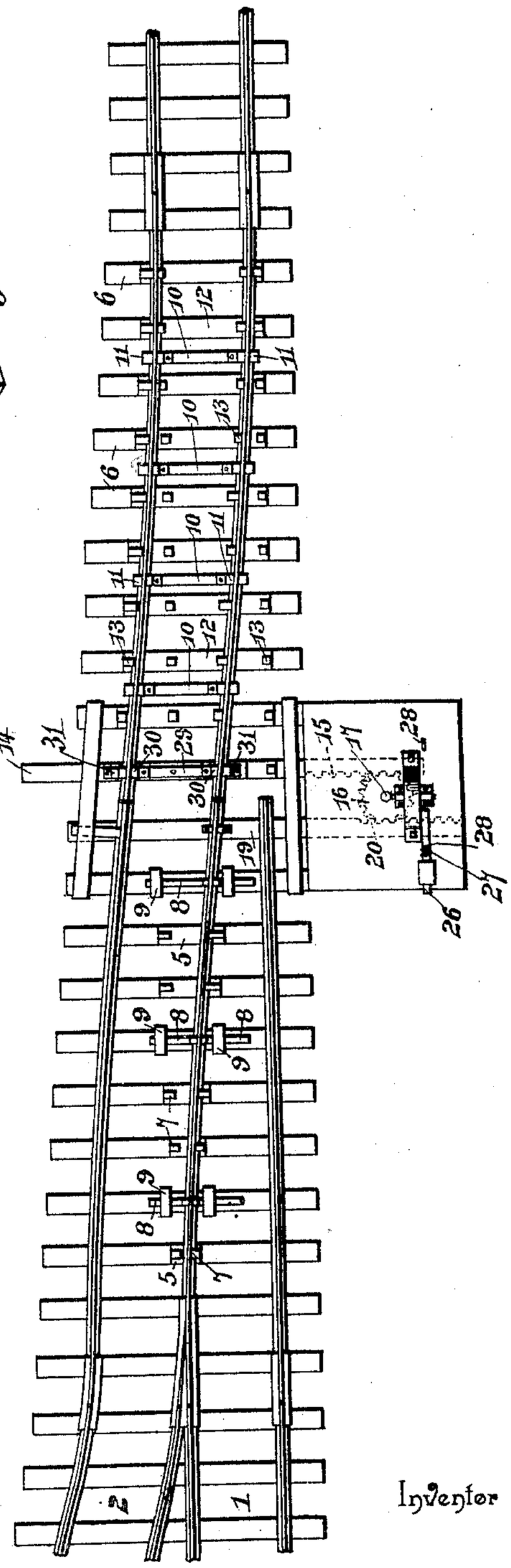
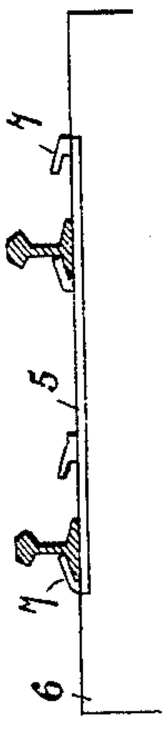


FIG. 9.



Witnesses

Jas. K. McCathran

V. B. Hillyard.

Inventor

By his Attorneys, George W. McGee

C. A. Snow & Co.

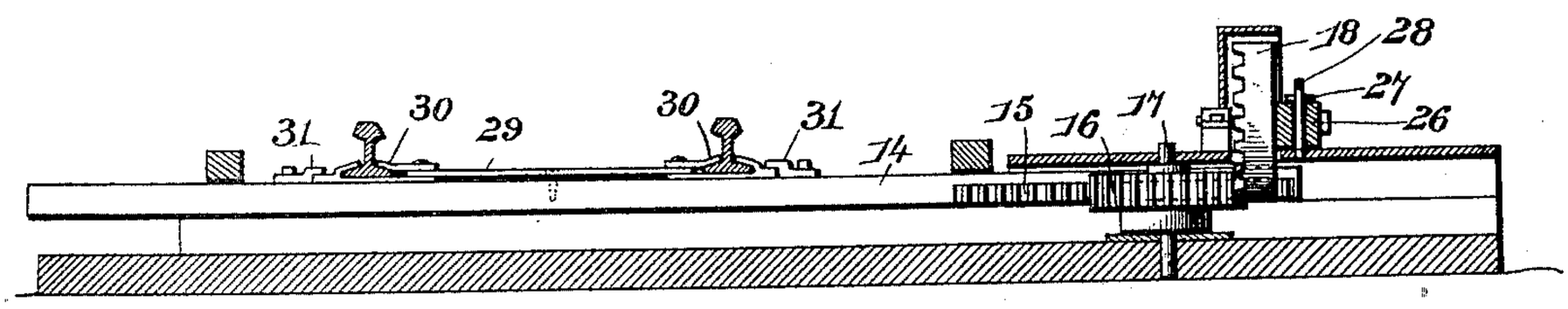
(No Model.) 2 Sheets—Sheet 2.

G. W. McGEE.

RAILROAD SWITCH.

No. 581,761. Patented May 4, 1897.

FIG. 3.



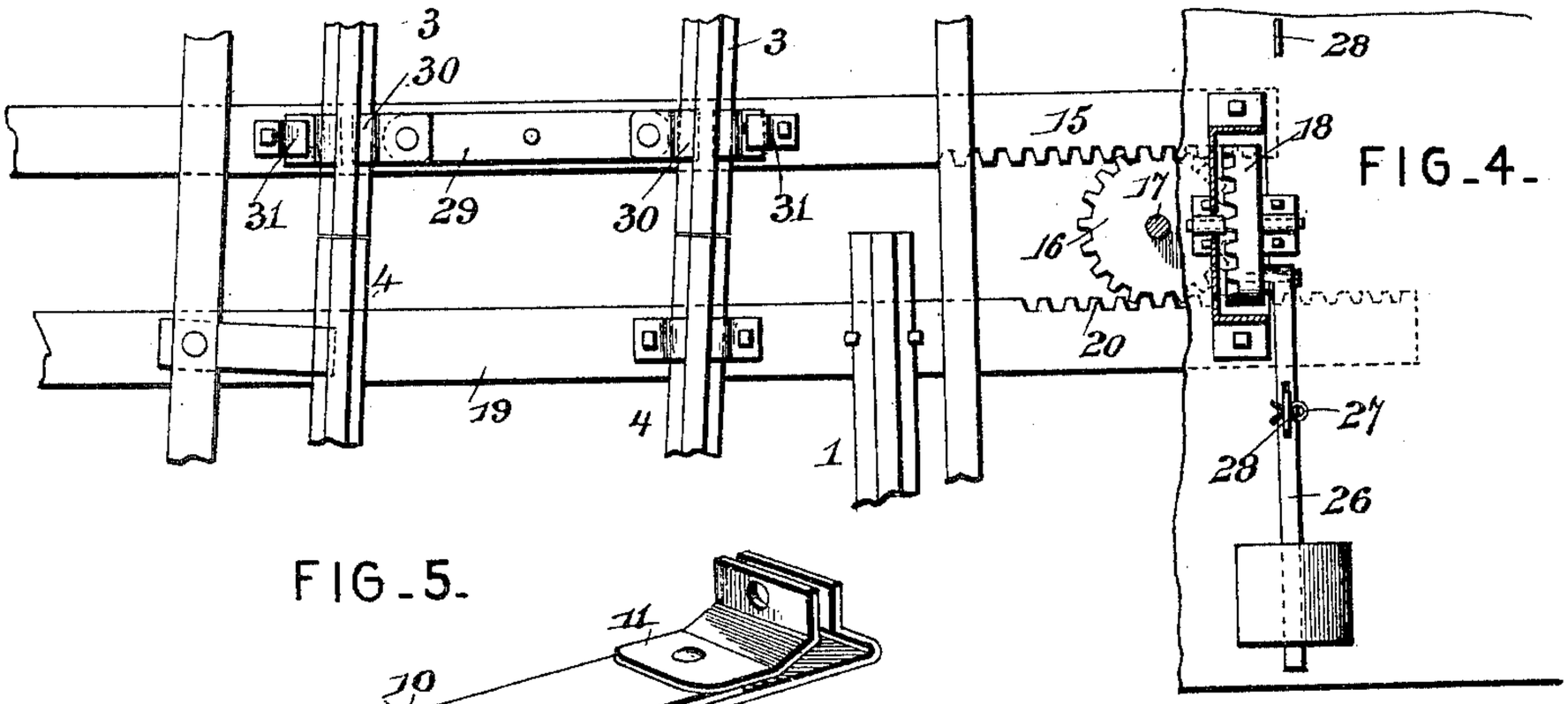


FIG. 4.

FIG. 5.

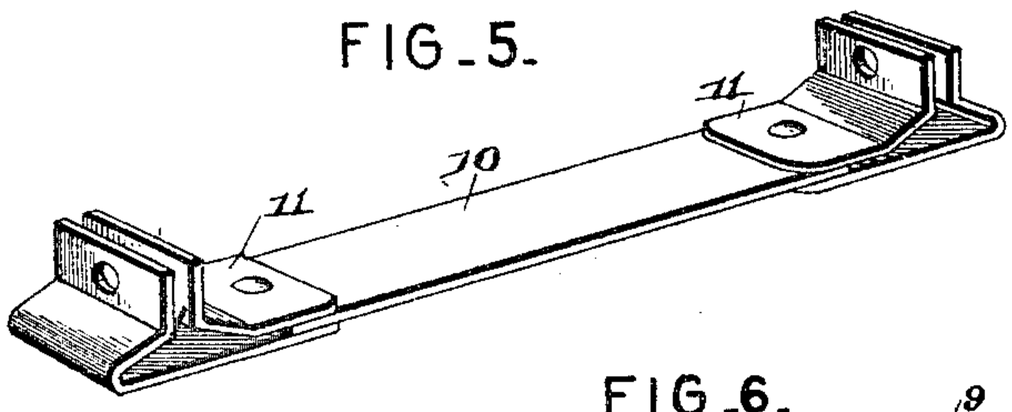


FIG. 6.

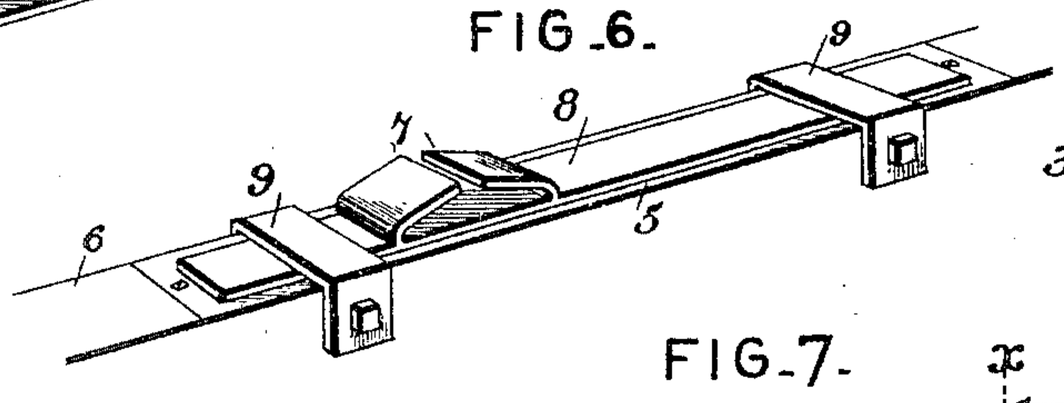


FIG. 8.

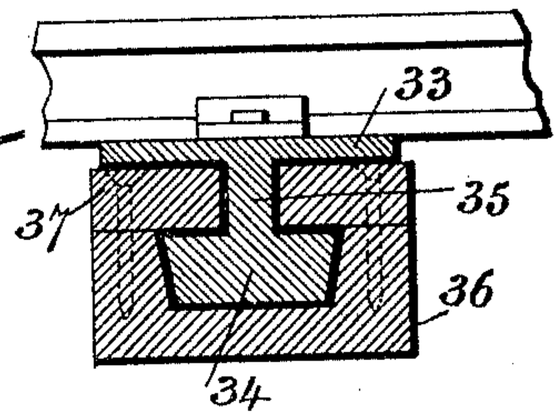
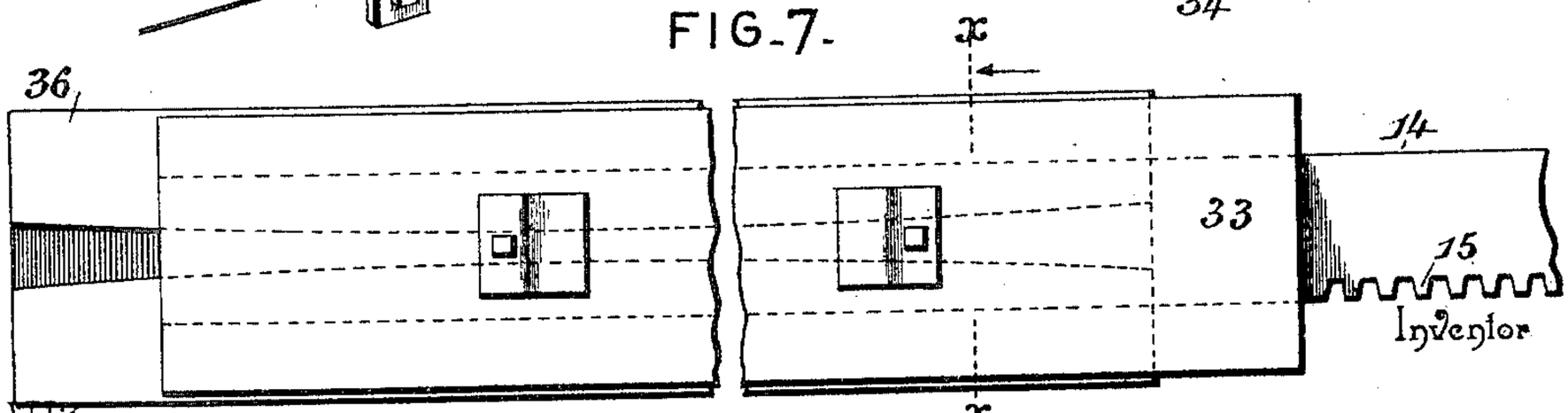


FIG. 7.



Witnesses

Jas. K. McCathran

U. B. Hillyard.

By his Attorneys. George W. McGee

Church & Co.

UNITED STATES PATENT OFFICE.

GEORGE W. McGEE, OF KNOTTSVILLE, WEST VIRGINIA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 581,761, dated May 4, 1897.

Application filed December 6, 1895. Serial No. 571,291. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. McGEE, a citizen of the United States, residing at Knottsville, in the county of Taylor and State of West Virginia, have invented a new and useful Railroad-Switch, of which the following is a specification.

This invention relates to railroad-switches and aims to dispense with a frog and one switch-rail, thereby reducing the number of parts and otherwise simplifying the construction and lessening the cost attendant upon the provision and maintenance of this class of devices.

The improvement consists in certain details of construction, novel features, and peculiar combinations of the parts, which hereinafter will be more particularly set forth, illustrated, and finally pointed out in the claims.

In the drawings is illustrated an embodiment of the invention, although 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 this invention, and in said drawings—

Figure 1 is a plan view of a railway-switch, showing the main line closed. Fig. 2 shows the main line open and the siding closed. Fig. 3 is a detail view of the mechanism for operating the switch. Fig. 4 is a plan view of the same. Fig. 5 is a detail view of the means for connecting and bracing the companion switch-rails. Fig. 6 is a detail view of a slidable chair, showing the means for holding it to its supporting-tie. Fig. 7 is a top plan view of a modified form of guide and switch-bar. Fig. 8 is a cross-section on the line X X of Fig. 7, looking to the left, as indicated by the arrow. Fig. 9 is a side elevation of a tie, showing the superposed plate provided with pairs of stops to limit the throw of the switch-rails and engage with the foot thereof and support the said switch-rails in an upright position. Fig. 10 is a detail view of a chair or plate having stops.

Referring to the drawings, the same numerals of reference denote corresponding and like parts in all the figures, and 1 indicates the main line or track; 2, the siding; 3, the companion switch-rails, and 4 the single switch-rail.

The adjacent rails of the main line and siding converge as they approach the switch and merge into a single rail, which is represented by the switch-rail 4, the rails at their point of union being secured together by fish-plates or in any well-known manner. The rails exterior to the movable rail 4 are fixed, and the switch-rail 4 is movable toward one or the other and slides upon plates 5, secured to the ties 6. Bracket-like stops 7 are provided at the ends of the plates 5 and are spaced a proper distance apart, so as to engage with the foot of the rail 4 and limit the movement of the latter in each direction and support it against lateral stress when the train is passing over the same. These stops 7 are integrally formed with the plates 5, preferably by returning or folding the end portions thereof. The stops near the free end of the rail 4 are spaced the greatest distance apart, and the distance between the remaining stops gradually decreases as the inner end of the rail 4 is approached. Slidable chairs 8 are located at intervals in the length of the rail 4, and their projecting end portions operate beneath keepers 9, secured to the ties upon which the said chairs are placed. By this means the rail 4 is held upon the ties and prevented from leaving the same when the train is passing thereover.

The companion switch-rails 3 are substantially connected together in any desired manner to cause them to move together and to maintain a fixed relative distance apart under all conditions. To attain this end in a simple and satisfactory manner, tie-bars 10 are provided and have pivotal connection at their ends with clips 11, rigidly secured to the switch-rails 3. In the lateral movement of the switch-rails 3 there is a slight relative longitudinal movement due to the springing of the rails from a normal position; hence the necessity for pivotally connecting the tie-bars 10 at their ends with the said switch-rails to enable the latter to be readily moved. These rails, like the switch-rail 4, are mounted upon plates 12 and are limited in their movements by operating between corresponding

pairs of stops 13, similar to the stops 7, but formed by swaging or pressing portions from the body of the plates 12. Obviously these stops 13, as also the stops 7, may be provided in any well-known and convenient manner.

A switch-bar 14 connects the free ends of the rails 3 and has a rack portion 15 at its outer end, which meshes with a gear-wheel 16 at the lower end of a shaft 17, with which meshes a companion gear-wheel 18, having a weighted lever 26, which is secured in either of its two positions by means of a spring-key 27, passing through staples 28. A switch-bar 19 is connected with the free end of the switch-rail 4 and has a rack portion 20, which is in mesh with the gear-wheel 16 at a point diametrically opposite to the engagement therewith of the rack 15. Thus upon rotating the gear-wheel 16 the switch-bars 14 and 19 will be moved in opposite directions, and the switch-rails connected therewith will be correspondingly moved. The switch-rails are connected with the respective switch-bars in any of the usual ways. A plate 29 is pivotally connected at its ends to clips 30, and the latter are held to the bar 14 by bracket-stops 31. The plate 29 has pivotal connection midway of its ends with the bar 14, so as to turn and prevent binding.

The operating-lever 26 is held in either of its two positions by positive means and is weighted in the usual manner to prevent accidental movement in the event of the attendant being called to perform other duties. When the main line or track is closed, the operating-lever 26 occupies the limit of its throw in one direction and is locked by the key 27 passing through the staple 28. When the siding is closed, the operating-lever 26 occupies the limit of its throw in the opposite direction and is secured to the other staple 28 by the key. The switch-rail 4 is adapted to be brought in alinement with either of the switch-rails 3, accordingly as it is required to close the siding or the main track. The switch-rails are not pivotally connected with the main rails and are adapted to be sprung from a normal position when moved to either position for closing the main track or the siding.

The switch-bars may be directed in their reciprocating movements in any desired manner and may be similarly constructed, and, as shown in Figs. 7 and 8, each comprises an upper member 33 and a lower member 34, which extend in parallel relation and are connected by an intermediate portion 35. The tie 36 is grooved in its top side to receive the member 34, and metal plates 37 are attached to the top side of the tie and project over the groove therein and occupy the space between the members 33 and 34, thereby securing the bar to the tie and guiding it in its movements. The plates 37 are spiked or otherwise secured to the tie, and their inner or opposing edges are oppositely curved from a medial point, whereby the space formed between them gradually widens from a middle point toward the extremities, thereby making provision for a slight vibratory movement of the switch-bar during its reciprocating movements. The groove in which the member 34 reciprocates correspondingly widens toward its ends to allow for the vibratory or oscillatory movements of the switch-bar.

Having thus described the invention, what is claimed as new is—

1. In a railroad-switch, the combination with companion switch-rails, and a switch-bar, of clips firmly attached to the said switch-rails and having their end portions projecting, a plate pivotally connected to the switch-bar intermediate of its ends and having pivotal connection at its extremities with the inner ends of the aforesaid clips, and bracket-stops secured to the switch-bar and extending over the outer ends of the aforesaid clips, substantially as shown for the purpose described.

2. In a railroad-switch, the combination with a switch-rail and a switch-bar, of a guide comprising horizontal portions having their opposing edges oppositely curved from a middle point, and a plate secured to the switch-bar and extending over the said horizontal portions, substantially in the manner and for the purpose set forth.

3. A railroad-switch comprising a single switch-rail movable between the outer rails of the main track and siding and forming the inner rail of each according to its relative position, companion switch-rails adapted to have either rail brought into alinement with the aforesaid single switch-rail to close either the siding or main track, stops disposed upon opposite sides of the several switch-rails to limit their throw and engage with the foot thereof, switch-bars having connection with the respective switch-rails and having rack portions, clips attached to the companion switch-rails and having their ends projecting, a plate pivoted at its ends to the clips and between its ends to the adjacent switch-bar, bracket-stops engaging with the outer ends of the clips and secured to the switch-bar, a gear-wheel located between and meshing with the rack portions of the switch-bars to move the latter in opposite directions, and a lever operatively connected with the gear-wheel, substantially as and for the purpose set forth.

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

GEORGE W. McGEE.

Witnesses:
JOHN R. THAYER,
HUGH WARDER.