(No Model.)

2 Sheets—Sheet 1.

D. E. SHEA.

RAILWAY FROG.

No. 546,351. Patented Sept. 17, 1895.

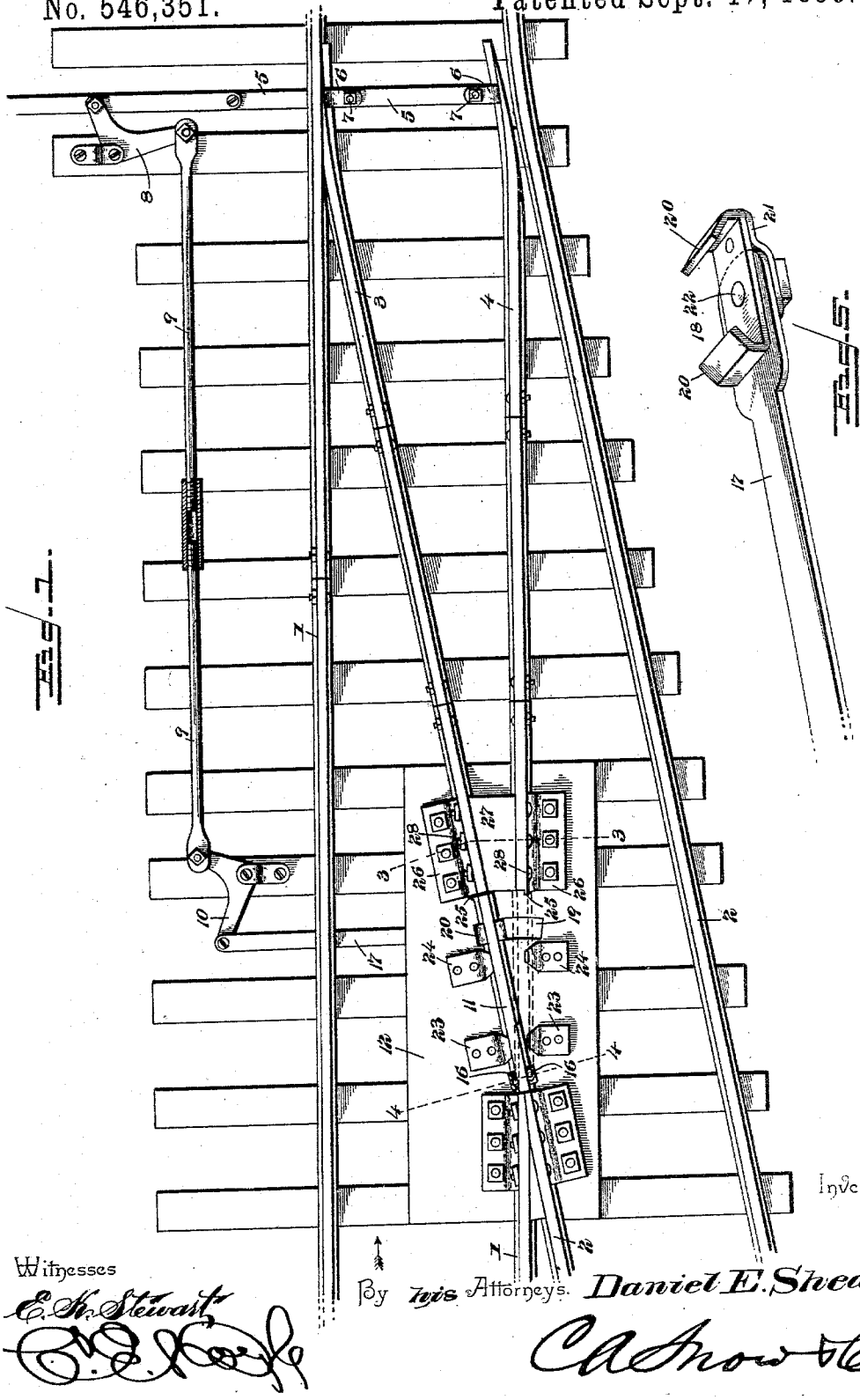


Fig. 1.

Fig. 5.

Witnesses
E. K. Stewart
E. C. Hoole

Inventor
By his Attorneys. Daniel E. Shea
C. A. Snow & Co.

ANDREW B. GRAHAM, PHOTO-LITHO. WASHINGTON, D.C.

(No Model.)

2 Sheets—Sheet 2.

D. E. SHEA.

RAILWAY FROG.

No. 546,351. Patented Sept. 17, 1895.

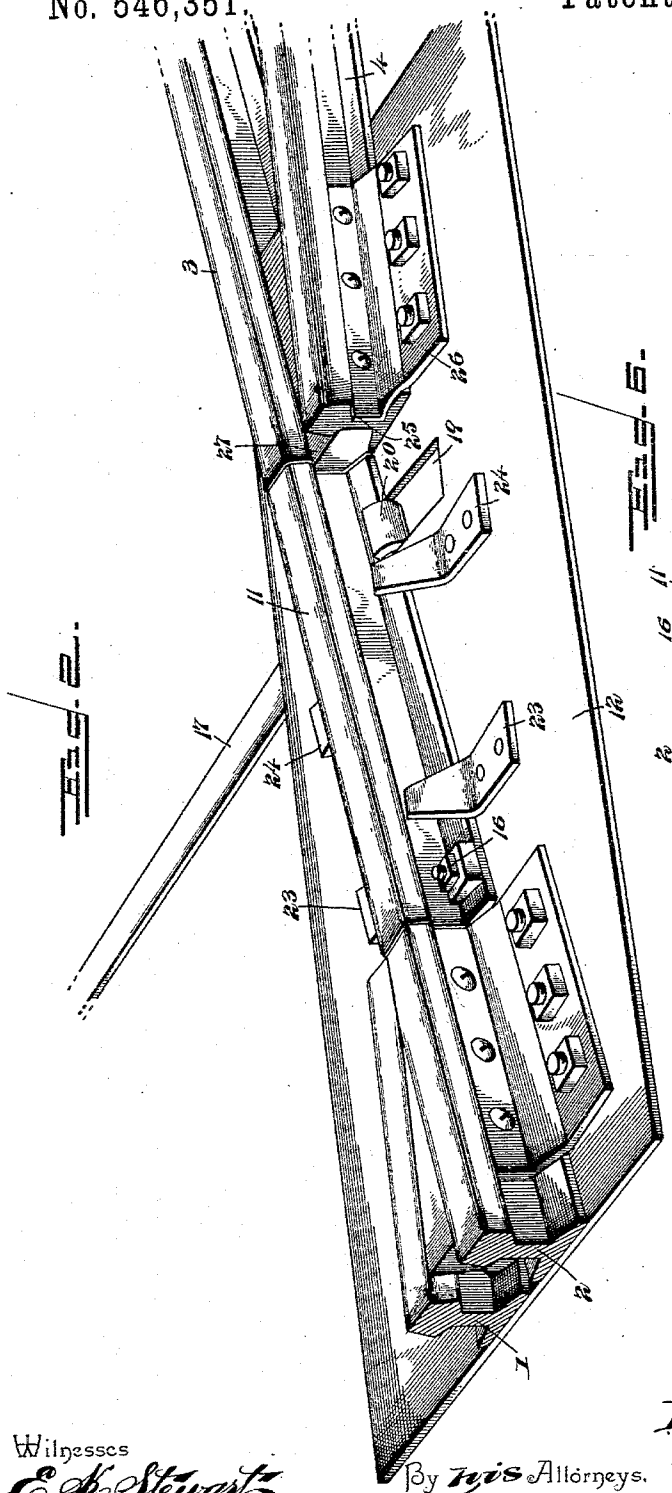


Fig. 2.

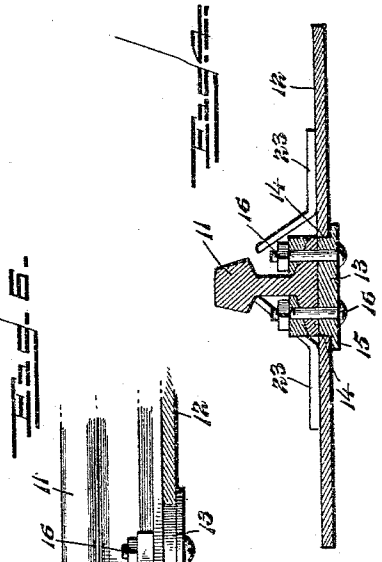


Fig. 5.

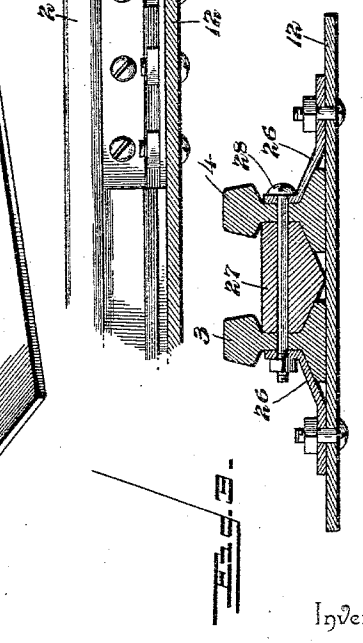


Fig. 3.

Witnesses
E. K. Stewart.

Inventor
Daniel E. Shea

By his Attorneys.
C. A. Snow & Co.

ANDREW B. GRAHAM PHOTO-LITHO. WASHINGTON, D.C.

UNITED STATES PATENT OFFICE.

DANIEL EDWARD SHEA, OF WATERTOWN, ASSIGNOR OF ONE-FOURTH TO THOMAS J. SHEA, OF CHARLOTTE, NEW YORK.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 546,351, dated September 17, 1895.

Application filed March 14, 1895. Serial No. 541,764. (No model.)

To all whom it may concern:

Be it known that I, DANIEL EDWARD SHEA, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented a new and useful Railway-Frog, of which the following is a specification.

My invention relates to railway-frogs, and has for its object to provide a simple and efficient frog whereby the wheels of the train encountering the same will adjust the switch for the track which the train is traversing, and, furthermore, to provide strong and efficient means for securing the contiguous parts of the rails to prevent spreading, springing, &c.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a plan view of a switch mechanism constructed in accordance with my invention. Fig. 2 is a detail view, in perspective, of the frog and contiguous portions of the mechanism. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a detail section on the line 4 4 of Fig. 1. Fig. 5 is a detail view, in perspective, of the connecting-rod and shoe for attachment to the free end of the frog. Fig. 6 is a detail view, partly in section, of the means for pivoting the frog.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the main-track rails, 2 the contiguous portions of the siding-track rails, and 3 and 4 the switch-rails, which are arranged as continuations of the inner main and siding track rails, and are connected to a switch-bar 5, whereby the free end of one of the switch-rails may be brought into operative contact with its respective stationary rail. This switch-bar is connected to the free ends of the switch-rails by means of clips 6, bolted to the switch-bar, as shown at 7, and the switch-bar is connected to a bell-crank lever 8, from which extends a rod 9 to a similar bell-crank lever 10, arranged contiguous to the adjustable frog 11. This adjustable frog is arranged at the point of intersection of the inner main and siding track rails, the same being pivotally connected to a base-plate 12 at an intermediate point, whereby both extremities thereof have a swinging movement.

The pivotal connection of the frog to the base-plate is attained by means of a turn-table 13, fitting in a circular opening 14 in the base-plate and provided with a flange 15 to bear against the under surface thereof. One side of this turn-table is flush with the rounded extremity of the frog, said frog being secured to the turn-table by means of the vertical bolts 16.

It will be seen that while the fulcrum of the frog is at an intermediate point of the length thereof it is adjacent to one end and is removed from the adjacent end a distance equal to the radius of the turn-table. Connection between the bell-crank lever 10 and the free end of the frog is secured by means of a bar 17, which is connected to an arc-shaped slide 18, mounted in a segmental slot 19 in the base-plate. This slide is provided with clips 20, integral with the slide, and the foot of the frog is adapted to be engaged therewith by inserting the same longitudinally. Depending from the under side of this slide is a keeper 21, in which is inserted the extremity of the bar 17, pivotal connection with said bar being established by means of a pivot-bolt 22.

Angle-braces 23 and 24 are arranged, respectively, adjacent to and remote from the pivotal point of the frog, those upon one side being aligned with the main and those on the other with the siding-track rails, whereby the frog in either position is supported by two of the braces, which engage at their free ends under the tread.

To stop the movement of the free end of the frog, and thus limit the swing thereof to the proper angle, I employ ears 25, formed on the adjacent extremities of angle-plates 26, which are employed to secure the adjacent portions of the track-rails and prevent spreading thereof or relative change of position under variations of temperature.

Interposed between the contiguous ends of the main and siding track rails adjacent to

the free end of the frog is a spacing-block 27, which is held in place by the transverse bolts 28, employed to secure the angle-plates.

From the above construction it will be seen that a train approaching on the main track in the direction indicated by the arrow in Fig. 1, the switch and frog being open or set for the siding, the flange of the wheel which first traverses the frog will throw it to the main track position, (shown in dotted lines in said figure,) and thereby close the switch. Furthermore, it will be seen that the parts of the mechanism contiguous to the frog are rigidly connected and strongly braced to prevent spreading and disarrangement either by strain or by changes of temperature, and that the manner of bracing the frog in either of its positions insures rigidity and strength. Furthermore, the frog is mounted to swing freely and without unnecessary friction upon its bearings and there is no interval between the adjacent portions of the siding and main track rails and the extremity of the frog over which the wheels must jump in order to rest upon the frog, and therefore the automatic adjustment of the switch is attained without jar and with a degree of certainty which is desirable in devices of this class.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

The combination with intersecting main and track rails and switch mechanism, of a a base plate arranged under the contiguous extremities of the intersecting rails and permanently secured thereto, said plate being provided with a circular bearing 14 and a concentric segmental slot 19, a turn-table mounted in the bearing and provided with a flange in contact with the under surface of the base-plate, the upper surface of said turn-table being flush with the upper surface of the base-plate, a frog bolted at one end to the upper surface of the turn-table and adapted to be aligned with either the main or the siding track-rail, said frog extending toward both ends beyond the periphery of the turn-table to prevent downward displacement of the turn-table, an arc-shaped slide 18 arranged in the segmental slot of the base-plate and provided with integral terminal clips 20 which engage the foot of the frog-rail near its free end, a connecting-bar 17 pivotally connected at one end to the under side of the slide, said slide being provided with a keeper 21 in which the end of the connecting-bar is fitted, stops 25 projecting beyond the extremities of the main and siding track-rails to limit the lateral movement of the free end of the frog, and angle braces 23 and 24 arranged upon opposite sides of the path of the frog-rail and provided with upwardly and inwardly inclined extremities to bear against the under surfaces of the tread of the frog when it is in alignment with either track-rail, 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.

DANIEL EDWARD SHEA.

Witnesses:
J. P. THOMSON,
HENRY HAYDEN.