

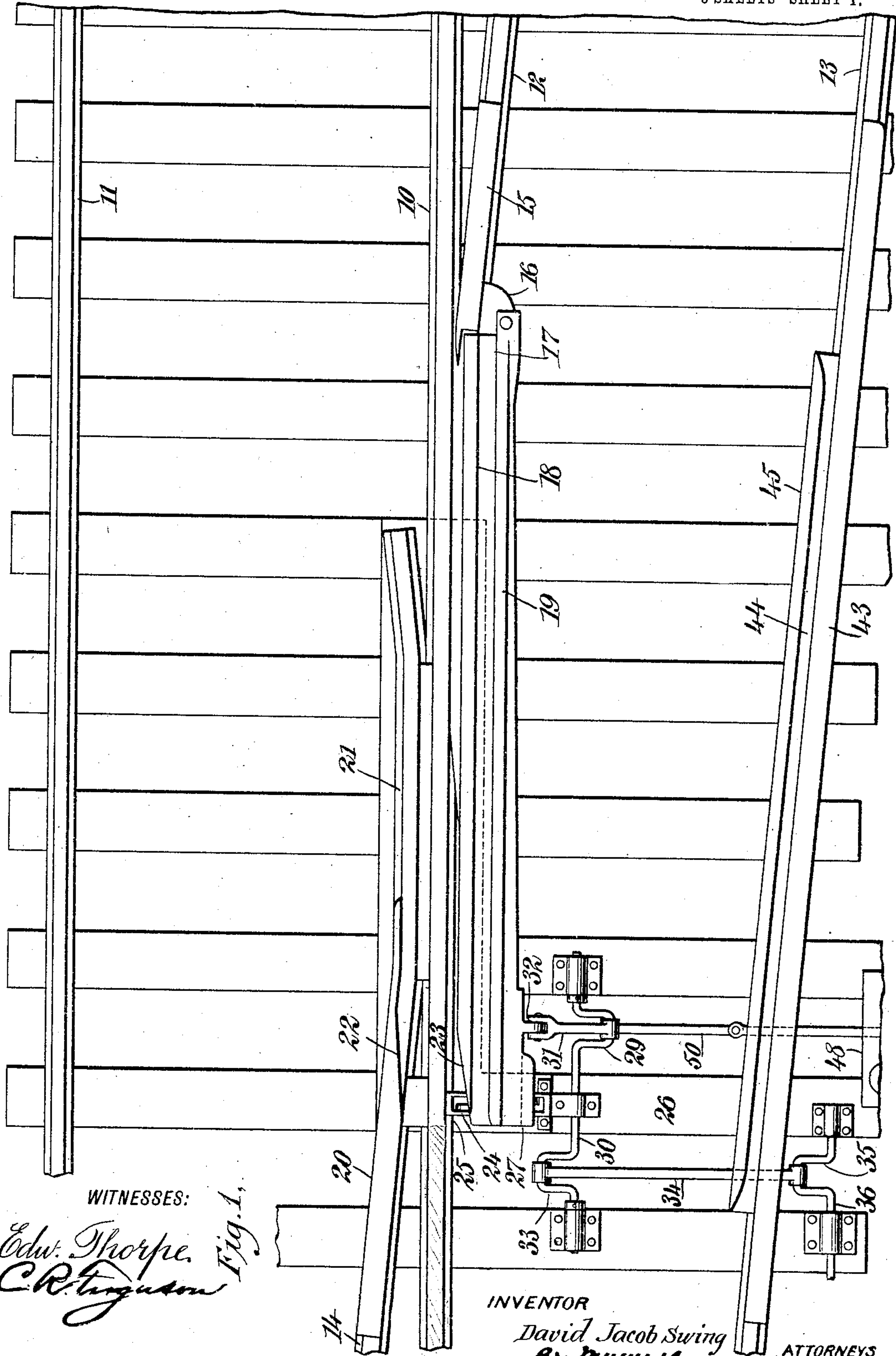
No. 786,068.

PATENTED MAR. 28, 1905.

D. J. SWING.
RAILWAY FROG AND GUARD RAIL.

APPLICATION FILED AUG. 25, 1904.

3 SHEETS—SHEET 1.



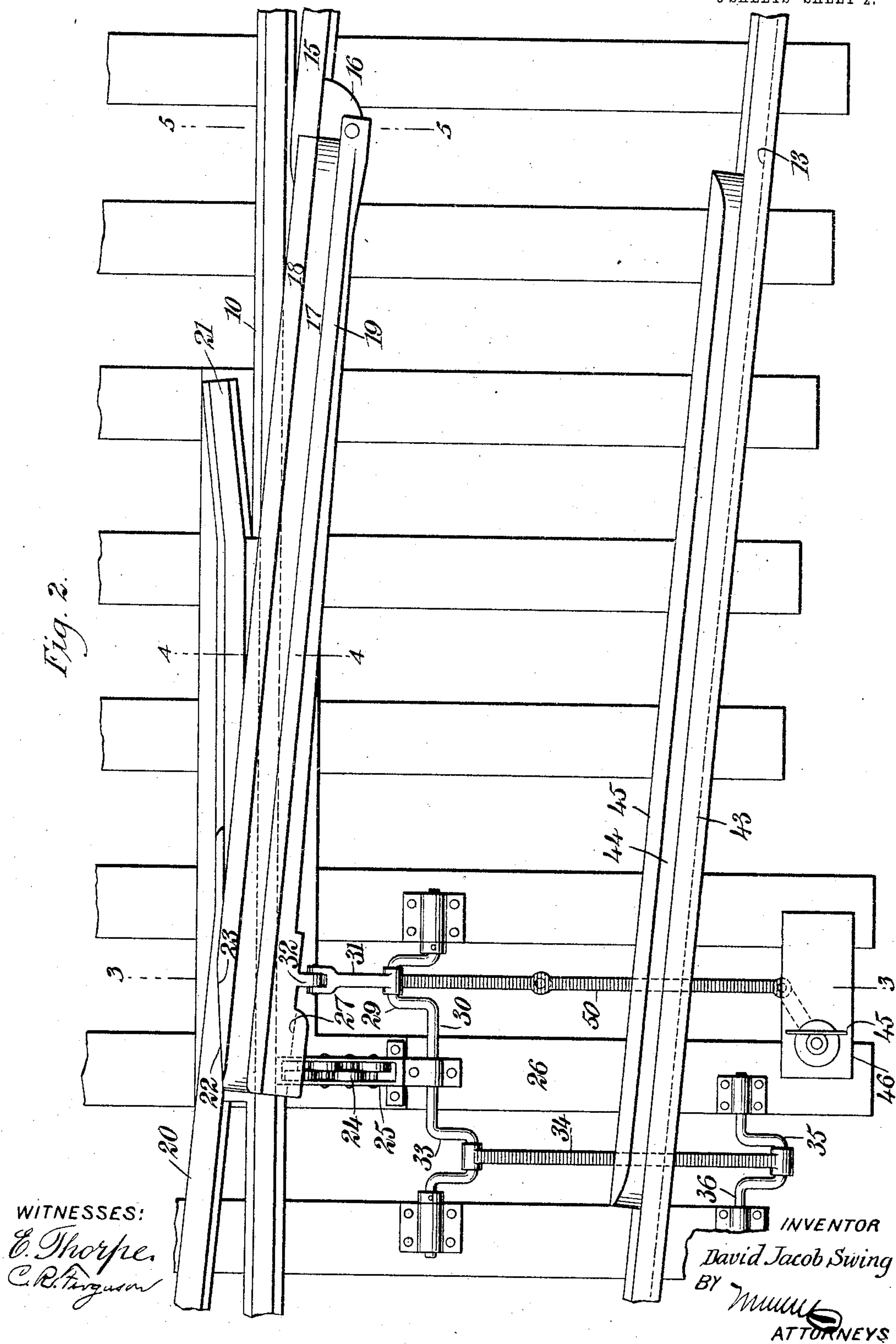
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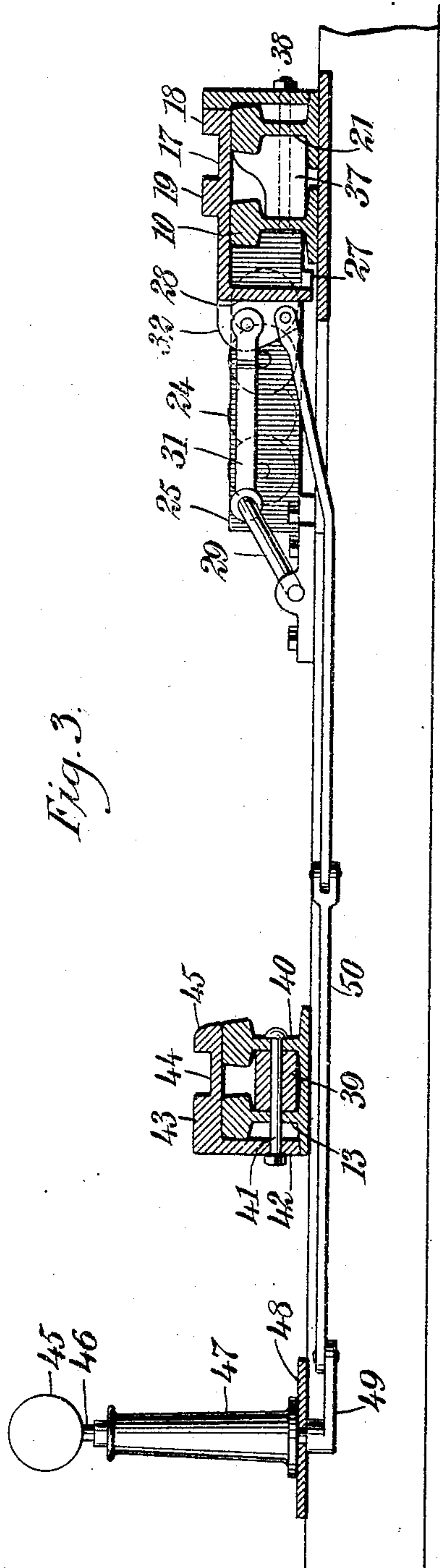
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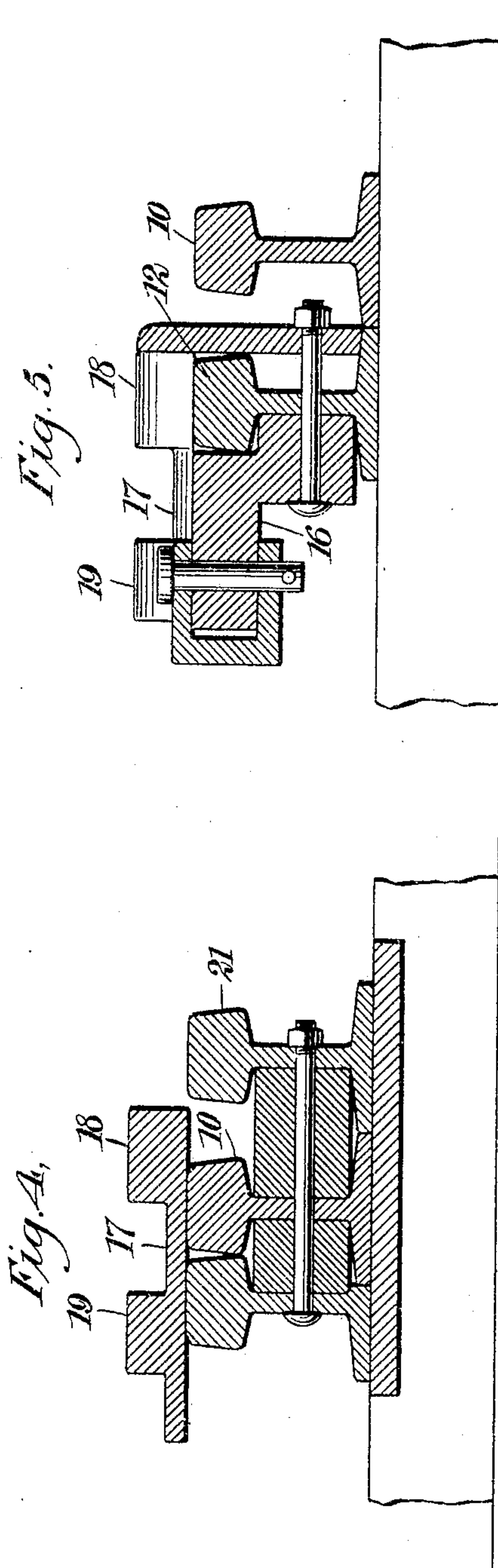
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3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DAVID JACOB SWING, OF HAGAN, GEORGIA.

RAILWAY FROG AND GUARD-RAIL.

SPECIFICATION forming part of Letters Patent No. 786,068, dated March 28, 1905.

Application filed August 25, 1904. Serial No. 222,076.

To all whom it may concern:

Be it known that I, DAVID JACOB SWING, a citizen of the United States, and a resident of Hagan, in the county of Tattnall and State of Georgia, have invented new and useful Improvements in Railway Frogs and Guard-Rails, of which the following is a full, clear, and exact description.

This invention relates to improvements in switch-frogs and guard-rails for railways, the object being to provide a frog connection between main-line rails and siding-rails so arranged that the frog may be swung clear of the main line, thus providing solid or continuous main-line rails at the siding and making it unnecessary to slacken the speed of a train in passing such points on the main line.

Other objects of the invention will appear in the general description.

I will describe railway frogs and guard-rails embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view showing a railway frog and guard-rail mechanism embodying my invention, showing the position of parts when the main line is open. Fig. 2 is a plan view illustrating the position of parts in connecting the siding with the main line. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a section on the line 4 4 of Fig. 2, and Fig. 5 is a section on the line 5 5 of Fig. 2.

Referring to the drawings, 10 11 indicate main-line rails, and 12 13 siding-rails, and 14 indicates a switch-rail designed for connecting the siding-rail 12 with the outer main rail 11 through the medium of a suitable switch. Attached to the inner siding-rail 12 is a block 15, which on the top is curved downward to the rail. Extended inward from this block 15 is a bracket 16, to which the frog-plate 17 is pivotally connected, so as to swing on a horizontal plane, the under side of this plate being on a horizontal plane with the top of the main rail 10, so that said plate may be swung over said rail under certain conditions, as will hereinafter appear.

On the frog-plate 17 is a rail-section 18 and a safety-rib 19, parallel with the rail-section. Secured to the switch-rail section 14 is a block 20, and this block 20 is also bolted to a stay-rail 21. At its outer edge the block 20 has a bevel 22 for engaging with the corresponding bevel 23 on the adjacent edge of the plate 17 near its free end. The under side of the free end of the plate 17 bears upon antifriction-rollers 24, arranged in a frame 25, supported on a cross-tie 26 and slightly above the same, so that an arm 27 may engage against the under side of said frame to prevent upward movement of the frog-plate. This arm 27, as here shown, is extended from a plate 28, extended downward from the inner side of the frog-plate.

From a crank 29 on a crank-shaft 30 a link 31 extends to a pivotal connection with a lug 32 on the stay-plate 28, and from another crank, 33, on the crank-shaft 30 and arranged reversely to the crank 29 an actuating-rod extends to a connection with a crank 35 on an operating crank-shaft 36, supported in suitable bearings on cross-ties and arranged at the outer side of the outer siding-rail. It may be here stated that this crank-shaft 36 will be extended a sufficient distance and properly connected with a switch-disk for placing the main rail 11 in connection with the switch-rail section 14, so that said switch and the frog may be simultaneously operated through the medium of a suitable shifting mechanism.

Spacing-blocks 37 are arranged between the rail 21 and the main rail 10, and the parts are secured together by bolts 38. Similar blocks 39 are arranged between the siding-rail 13 and a stay-rail 40, placed along the inner side thereof, the parts being secured together by bolts 41. These bolts also pass through openings in plates 42, extended downward from the outer side of a guard-rail 43, formed on a plate 44, and on this plate 44 is a safety-rib 45, parallel with the rail 43. This plate 44, it will be noted in Fig. 3, rests upon the rail 13 and upon the stay-rail 40, and the object of this guard-rail is to raise the train-wheels engaging therewith to a level with the opposite wheels passing over the frog.

Arranged at one side of the siding-track is a signal for indicating the position of the frog. As here shown, the signal consists of a disk 45, mounted on the upper end of a shaft 46, having a bearing in an upright 47, which extends downward through a plate 48 and is provided at its lower end with a crank-arm 49, from which an actuating-rod 50 extends to a connection with the lug 32. As here shown, this actuating-rod 50 is made in two pivotally-connected sections, so that the outer portion may swing on a horizontal plane as the shaft 46 rotates and while the said rod is moved lengthwise.

The operation of the device is quite clear from the drawings—that is, where the main-line track is open for the passing of a train the frog will be swung laterally therefrom to the position indicated in Fig. 1. When it is desired to side track a train, the frog is to be moved over the main rail 10 to the position indicated in Fig. 2, and, as before stated, the switch mechanism at this time will be in connection with the outer main rail 11.

It is obvious that a frog and guard-rail embodying my invention may be readily attached to railway-lines without disturbing the general construction of the line, and as the frog and guard-rails are preferably made of hardened steel they will wear for a considerable length of time.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a railway the combination with main-line rails and siding-rails, of a frog having swinging relation with one of the siding-rails and adapted to pass over the adjacent main-line rail, and a rail-section extended over the other of said siding-rails.

2. In a railway, the combination with a main-line rail and a siding-rail, of a frog-plate having swinging relation with the siding-rail and adapted to pass over the main rail, a track-section on said plate, and rollers supporting the free end of said frog.

3. In a railway, the combination with a main-line rail and a siding-rail, of a frog-plate hav-

ing swinging relation with the siding-rail and adapted to pass over the main rail, means for causing the swinging movements of said plate, and a signal operated by movements of said plate.

4. In a railway, the combination of a main-line rail and a siding-rail, of a block secured to the siding-rail, a frog having swinging connection with said block and adapted to pass over the main rail, a block having connection with a switch-rail and adapted for engagement with the free end of said frog, means for swinging the frog on a horizontal plane and a signal operated by movements of said frog.

5. In a railway, the combination with a main-line rail and a siding-rail, of a frog having swinging relation to the siding-rail, a frame arranged underneath the free end of said frog, rollers in said frame with which the free end of the frog engages, an arm carried by the frog for engaging against the under side of said frame, and means for moving the frog over the main rail.

6. In a railway, the combination with a main-line rail and a siding-rail, of a frog having swinging relation with the siding-rail and adapted to pass over the main rail, a crank-shaft having two cranks arranged in reverse order, a link connection between said frog and one of the cranks, an operating crank-lever, and a rod connection between the crank thereof and the other crank of the first-named crank-lever.

7. In a railway, the combination with a main-line rail and siding-rails, of a frog having swinging relation with one of the siding-rails and adapted to pass over said main rail, a guard-rail, a plate secured over the other of said siding-rails, and a rail-section on said plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID JACOB SWING.

Witnesses:

G. W. DE LOACH,
P. W. WILLIAMS.