

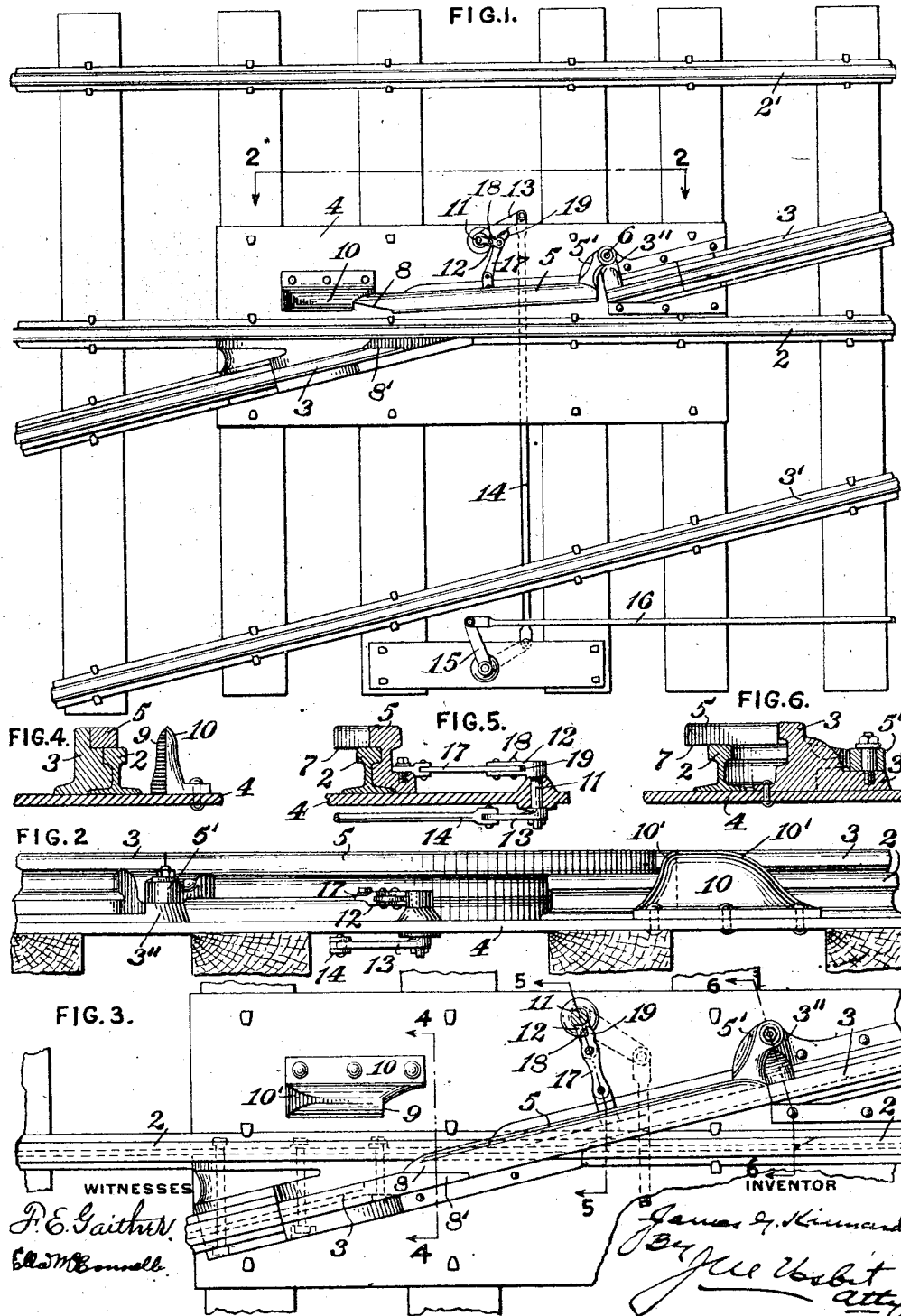
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FROG.

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1,052,260.

Patented Feb. 4, 1913.



UNITED STATES PATENT OFFICE.

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FROG.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES G. KINNARD, a resident of Kittanning, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Frogs, of which the following is a specification.

The object of this invention is to provide an efficient frog of improved construction, wherein the rail of a main track extends uninterruptedly through a gap in a rail of the switching track, the gap being closed for switching purposes by a section of track which is adapted to swing over the main track. Frog points and their associated guard rails are dispensed with, no break in the main track being necessary.

Included in the invention are improved means for operating the movable track section; means for locking the same in closed position; and means for guarding the free extremity of the movable track when in open position.

In the accompanying drawings, Figure 1 is a top plan of portions of a main and switching tracks illustrating the improved frog in operative position. Fig. 2 is an enlarged sectional elevation on line 2—2 of Fig. 1. Fig. 3 is a top plan of the frog drawn to a larger scale than in Fig. 1, parts being shown in section. Figs. 4, 5 and 6 are cross sections on lines 4—4, 5—5, and 6—6, respectively, of Fig. 3.

Referring to the drawings, 2 and 2' indicate, respectively, the rails of a main track, and 3 and 3' the rails of a switching track, rail 3 crossing the main track rail 2 and formed with a gap through which track 2 extends uninterruptedly. The frog is preferably mounted on a base plate 4 which rests on the usual cross ties.

The gap in the switching track 3 is closed by the movable track piece or section 5 which is here shown hinged at one end at 6, the parts immediately hinged together consisting preferably of projection 3' of rail 3 and a projection 5' of the movable track section. As thus arranged the hinge is located at one end of the movable track with the extremity of the latter adapted to abut one of the gap-forming extremities of rail 3 when closed. Rail 3 and its gap-closing section 5 are at an elevation sufficiently higher than the main track rail

2 to permit undercut portion 7 of the hinged rail to swing thereacross, as in Fig. 5. The free extremity of the hinged rail is beveled at 8 to cooperate with the corresponding bevel 8' of the gap extremity of rail 3.

When the hinged rail is in open position, as in Fig. 1, its extremity 8 is entered in a recess 9 of the combined stop and guard 10 secured to plate 4, the ends of the latter being rounded at 10', as shown in Fig. 2, to avoid catching chains or other parts that may hang from passing trains.

The entire length of hinged track section 5 bears on base plate 4 excepting the undercut extremity thereof which bridges and is supported by the main track rail 2 when the frog is closed. Thus the hinged section is positively supported throughout its whole length, and as the inner face thereof is shaped to fit and embrace the main track rail 2 it is solidly sustained at every point from one end to the other. As the hinged rail slides on the base plate the latter serves as a guide as well as a support for accurately directing said rail when moving to and from closed position. With the base plate and hinged rail cooperating as described a very substantial construction is had, one that can not yield downwardly under the heaviest load.

A characteristic of the invention is the combined operating and locking mechanism for the movable rail which, in the preferred adaptation, consists of a vertical shaft 11 mounted in base plate 4 and at its upper end provided with a crank 12, and at its lower end beneath plate 4 with crank 13 from which extends rod 14 to bell-crank 15, the latter in turn being connected by rod 16 to the switch throwing mechanism, so that the frog and switch, not shown, are operated simultaneously.

The extremity of crank 12 at the upper end of shaft 11 is pivoted to link 17 which latter is pivoted to the movable rail section. On crank 12 is stop 18 which is engaged by the tail-like projection 19 on link 17 when the movable track rail 5 is in gap-closing position, as in Fig. 3, at such time link 17 and crank 12 being in alignment and locking the rail in closed position, so that it is quite impossible for the latter to be moved sidewise or opened by other

than the operating mechanism. The stability of the movable rail part in gap-closing position is thus assured.

The parts are preferably so arranged that the movable rail and its attendant parts are arranged between the rails of the main track with the movable rail swinging outwardly over the main track rail 2 for closing the gap in the rail of the switching track.

The advantages of the invention are that the usual frog points and guard rails are dispensed with, the main track is continuous or uninterrupted, the crossing is effected by a single movable rail section, and this movable section is securely locked when the switching track is in use. The efficiency of the frog is the same regardless of the direction from which trains approach, and the mechanism is so simple that there is practically no danger of disorder.

I claim:—

1. In a frog, the combination of the rail of one track having an interruption, the rail of another track extending continuously through the interruption, a single piece of track hinged to swing across the continuously extending rail and close the

gap in the interrupted rail, a shaft provided with a crank, a link connecting the crank and the hinged track with the link and crank adapted to aline and lock the said track in gap-closing position, and means for operating the crank.

2. In a frog, the combination of the rail of one track having an interruption, the rail of another track extending continuously through the interruption, a single piece of track hinged to swing across the continuously extending rail and close the gap in the interrupted rail, a shaft provided with a crank, a stop on the crank inwardly from its outer end, a link pivotally connected to the hinged track and to the outer end of said crank, the link having a projection which engages the stop on the crank for holding the crank and link alined and locking the hinged track in gap-closing position, and shaft operating means.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES G. KINNARD.

Witnesses:

AUSTIN CLARK,
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