

No. 776,867.

PATENTED DEC. 6, 1904.

V. SCHAEFER.  
RAILWAY FROG AND CROSSING.  
APPLICATION FILED APR. 11, 1904.

NO MODEL.

Fig. 1

Fig. 4.

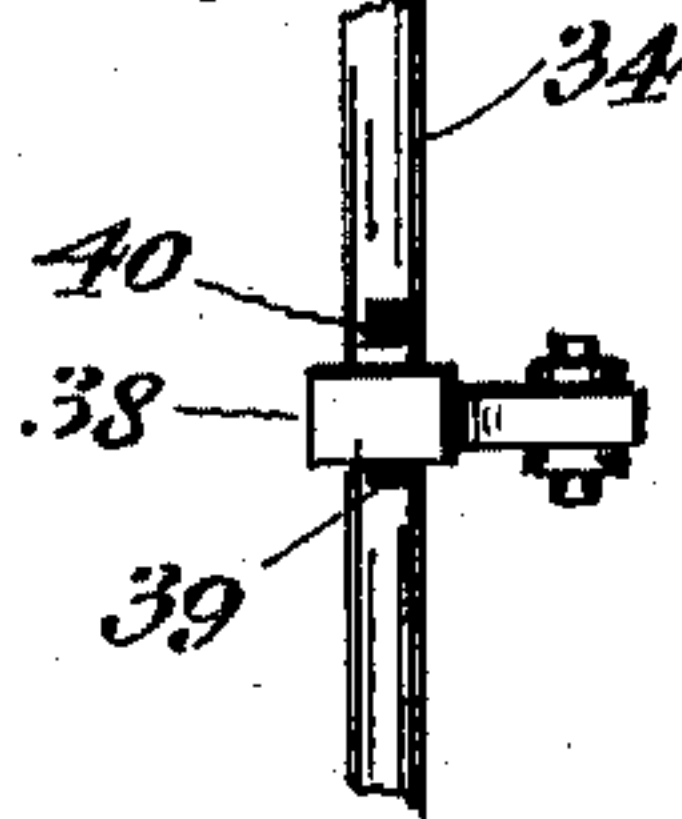
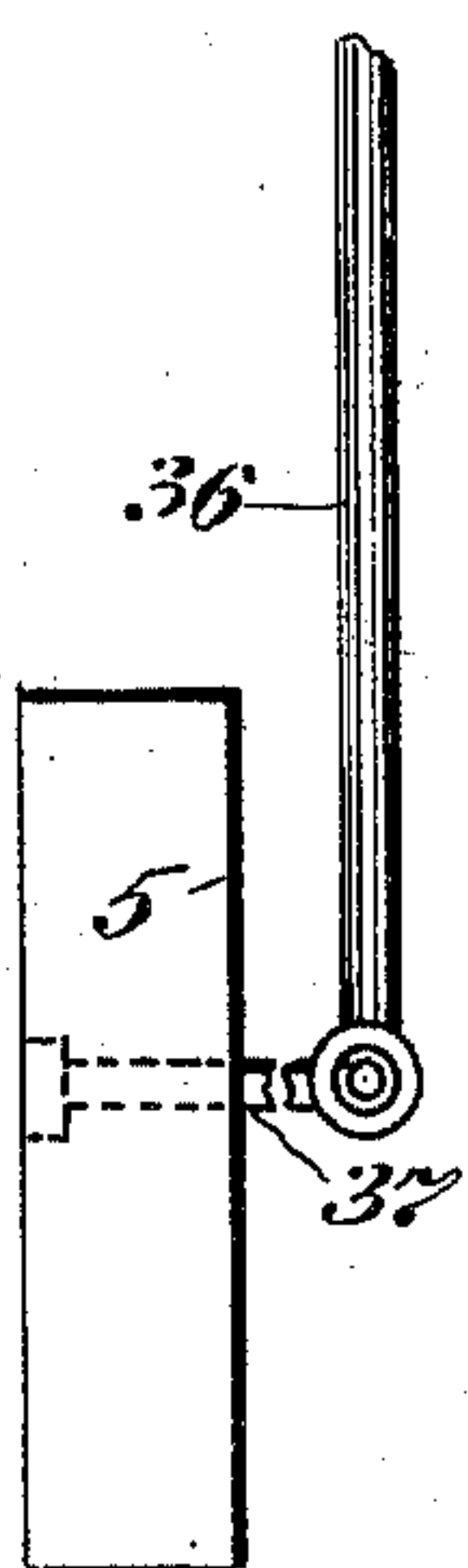
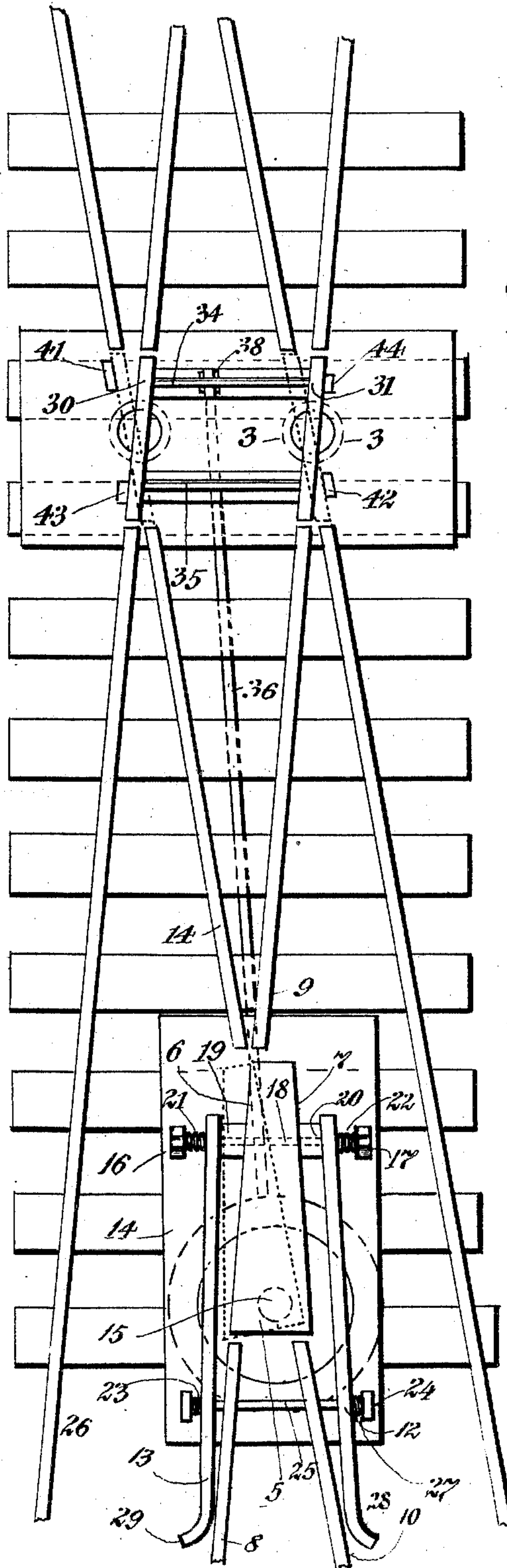
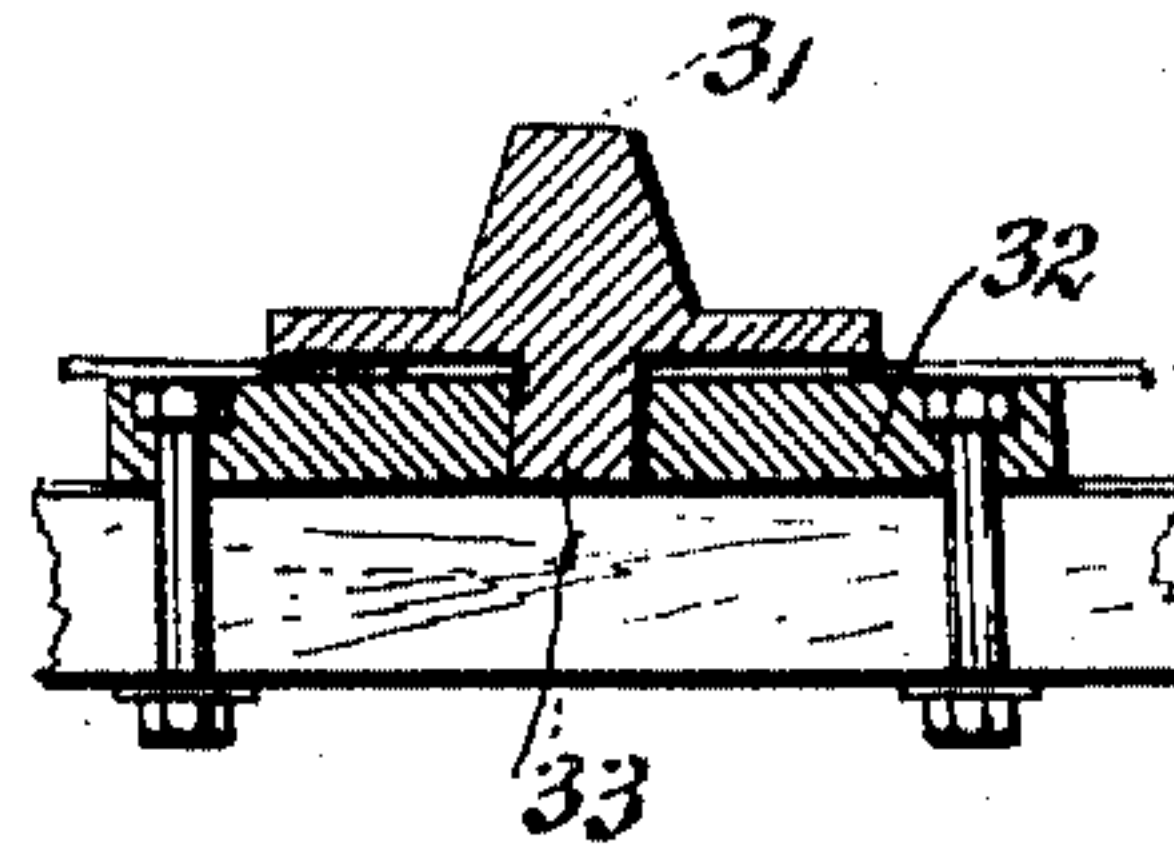


Fig. 2.



Witnesses.  
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Fig. 3.



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# UNITED STATES PATENT OFFICE.

VALENTIEN SCHAEFER, OF EAST ST. LOUIS, ILLINOIS.

## RAILWAY FROG AND CROSSING.

SPECIFICATION forming part of Letters Patent No. 776,867, dated December 6, 1904.

Application filed April 11, 1904. Serial No. 202,687. (No model.)

*To all whom it may concern:*

Be it known that I, VALENTIEN SCHAEFER, a citizen of the United States, and a resident of East St. Louis, St. Clair county, State of Illinois, have invented certain new and useful Improvements in Railway Frogs and Crossings, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to railway frogs and crossings; and it consists of the novel features herein shown, described, and claimed.

In the drawings, Figure 1 a plan of the crossing of two railways, showing my improved frogs and crossings in operation. Fig. 2 is a side elevation showing the connection between the frog and the crossing whereby the crossing is operated by the operation of the frog. Fig. 3 is a sectional detail on the line 3 3 of Fig. 1. Fig. 4 is an elevation.

Referring to the drawings in detail, the frog 5 is a metal plate of sufficient size and strength having the wheel-supporting edge 6 on one side and the wheel-supporting edge 7 on the opposite side. The frog is inserted into the railway-crossing so that the rails 8 and 9 are in alinement with the edge 6 of the frog when the frog is in one position, as shown in Fig. 1, and the rails 10 and 11 are in line with the edge 7 of the frog when the frog is thrown in the other position, as shown in dotted lines. The frog-operating lever 12 is mounted inside of the rail 10 and the edge 7, and a similar lever 13 is mounted inside of the rail 8 and the edge 6. The frog-operating levers are mounted upon a plate 14, and a pivot 15 extends downwardly from the head of the frog into the plate, as indicated in dotted lines, so as to hold the head from lateral movement. Bearing-blocks 16 and 17 extend upwardly from the plate 14 upon opposite sides of the swinging end of the frog, and a shaft 18 is fixed in the bearing-blocks 16 and 17, said shaft extending loosely through the operating-levers 12 and 13 and through the swinging end of the frog. Spacing-blocks 19 and 20 are inserted between the ends of the levers 12 and 13 upon each side of the frog 5, and the expansive coil-springs 21 and 22 are inserted

upon the shaft 18 between the ends of the levers 12 and 13 and the bearing-blocks 17 and 16, respectively, the tension of said springs being exerted to hold the frog in a central position. Bearing-blocks 23 and 24 extend upwardly from the plate 14 in transverse alinement with the ends of the rails 8 and 10, and a shaft 25 is mounted in said bearing-blocks and extends laterally through the operating-levers 12 and 13 and through the rails 8 and 10. Expansive coil-springs 26 and 27 are inserted upon the shaft 25 between the bearing-blocks 23 and 24 and the operating-levers 13 and 12, the tension of said springs being exerted to force the ends of the levers 13 and 12 against the rails 8 and 10.

The levers 12 and 13 have curved ends 28 and 29 beyond the points where the levers engage the rails 10 and 8, so that when a car is moving toward the frog upon the rail 10 the flange of the wheel will engage the curved end 28 of the operating-lever 12 and force the operating-lever inwardly from the rail 10 by the thickness of the car-wheel flange. At this time the spring 27 serves as a pivot for the lever, and the swinging end of the frog will be moved in the opposite direction to bring the supporting edge 7 of the frog into line with the rails 10 and 11. If a car is approaching a frog upon the rail 8, the operation is reversed.

The crossing-rails 30 and 31 are mounted upon plates 32, said plates 32 being secured to the ties, and pivots 33 extend downwardly from the rails 30 and 31 into the plates 32, as shown in detail in Fig. 3. The rails are loosely connected together by tie-rods 34 and 35, and an operating-arm 36 is attached to a post 37, extending downwardly from the frog 5, and the forward end of the operating-arm is connected to the tie-rod 34 by the yoke 38, there being stops 39 and 40 extending from the tie-rod 34 upon opposite sides of the yoke 38 to loosely locate the yoke relative to the tie-rod. The operating-arm 36 extends from the frog to the tie-rod under the rails and ties.

When the frog 5 swings upon its pivot, the operating-arm 36 swings and moves the tie-rod 34, thereby moving the rails 30 and 31



from one track to the other. Stops 41 and 42 limit the swing of the rails in one direction, and similar stops 43 and 44 limit the swing of the rails in the other direction.

5 I claim—

1. In a railway frog and crossing: the metal plate 5 having the wheel-supporting edge 6, and having the wheel-supporting edge 7; the frog-operating lever 12 beside the edge 7; the  
10 frog-operating lever 13 beside the edge 6; the plate 14 supporting the frog and frog-operating levers; the pivot 15 extending downwardly from the head of the frog into the plate; the bearing-blocks 16 and 17 extending upwardly  
15 from the plate; the shaft 18 mounted in the bearing-blocks 16 and 17, and extending loosely through the operating-levers 12 and 13 and through the swinging end of the frog 5; the spacing-blocks 19 and 20 inserted be-  
20 tween the ends of the levers 12 and 13 and the frog 5; the expansive coil-springs 21 and 22 inserted upon the shaft 18 between the ends of the levers 12 and 13 and the bearing-blocks 17 and 16 respectively; the bearing-blocks 23  
25 and 24 extending upwardly from the plate 14; the shaft 25 extending through the bearing-blocks 23 and 24 and through the operating-levers 12 and 13; the expansive coil-springs

26 and 27 upon the shaft 25 between the bearing-blocks 23 and 24 and the operating-levers 30  
13 and 12 respectively; crossing-rails pivotally mounted; and a connection between the frog and the crossing-rails, whereby the crossing-rails are moved as the frog is moved; substantially as specified. 35

2. In a railway frog and crossing: the plate 32; the crossing-rails 30 and 31 mounted upon the plate 32; the pivots 33 extending downwardly from the rails into the plate 32; tie-rods 34 and 35 loosely connecting the cross-  
40 ing-rails together; the yoke 38 loosely connected to the tie-rod 34; stops extending from the tie-rod upon each side of the yoke; the operating-arm 36 connected to the yoke 38; a frog pivotally mounted and connected to the  
45 operating-arm; and means whereby the frog is moved from one track to the other by the approaching train; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two sub-  
50 scribing witnesses.

VALENTIEN SCHAEFER.

Witnesses:

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