

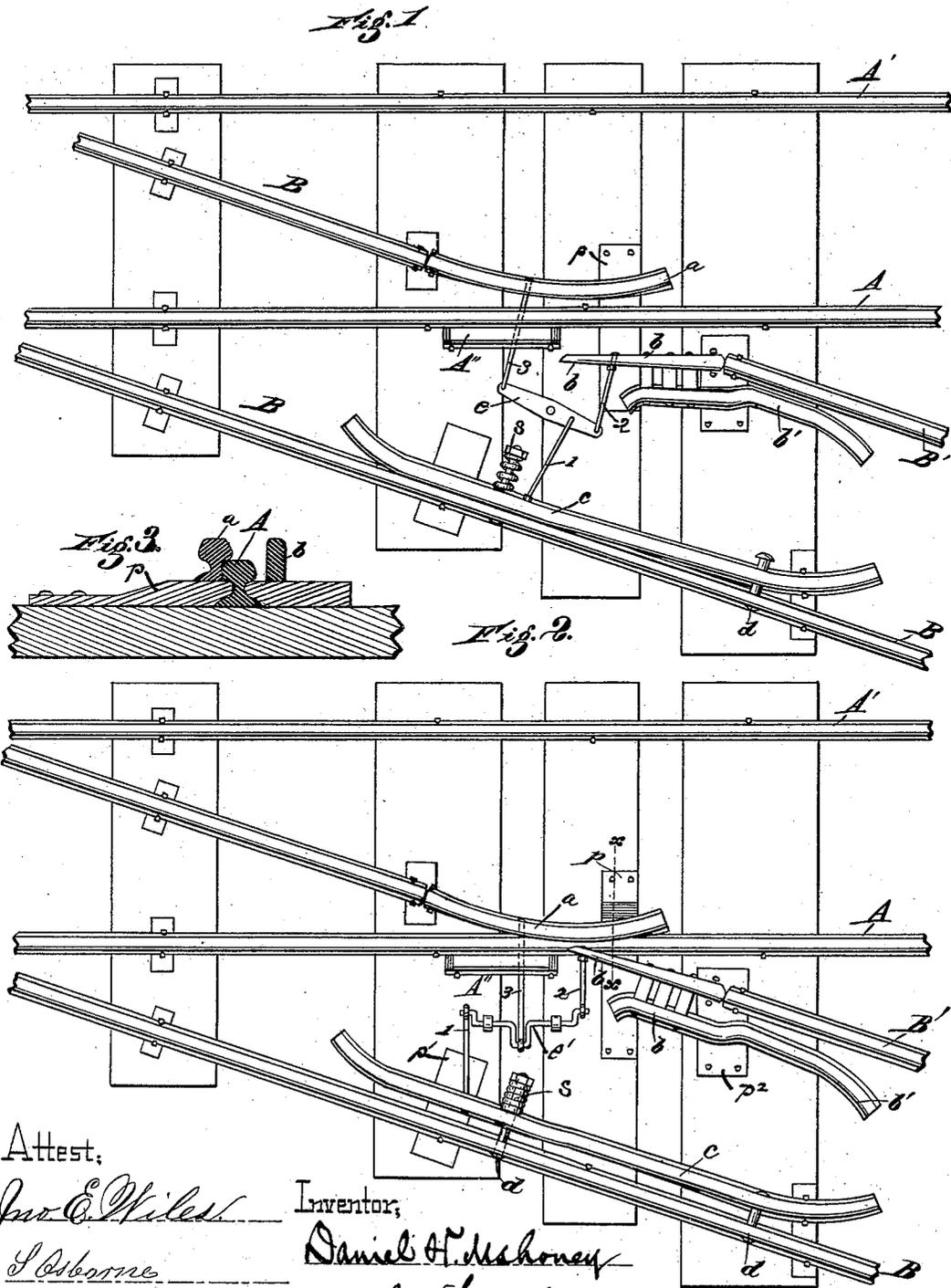
(No Model.)

D. H. MAHONEY.

RAILWAY FROG.

No. 297,142.

Patented Apr. 22, 1884.



Attest,

*Jos. E. Miles*  
*J. Osborne*

Inventor,

*Daniel H. Mahoney*  
*Gy. Kohnstoeck*

Attorney.

# UNITED STATES PATENT OFFICE.

DANIEL H. MAHONEY, OF OLNEY, ILLINOIS.

## RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 297,142, dated April 22, 1884.

Application filed August 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, DANIEL H. MAHONEY, a citizen of the United States, residing at Olney, Richland county, State of Illinois, have invented new and useful Improvements in Automatic Railway-Frogs, of which the following is a specification.

My invention relates to railway-frogs, its object being to produce a practicable and efficient frog or track crossing without impairing the continuity of the main track, which shall be automatically actuated by the passage of cars upon a siding to establish a temporary track crossing or frog and remove the same and restore the integrity of the main track after use.

To this end my invention consists in the construction and arrangement of the track and appurtenances, as hereinafter more fully set forth.

The accompanying drawings illustrate the manner of carrying out my invention. In these, Figures 1 and 2 are plan views of the frog open and closed, respectively, showing also alternative forms of a power-transmitting device between the tracks, as hereinafter described. Fig. 3 is a cross-section in the plane  $x x$  of Fig. 2, showing the position of the rails at the crossing-point.

The parts hereinafter referred to are indicated by letters of reference upon the drawings, in which A A' are the rails of the main track, and B B' those of a siding, respectively. It will be observed that the rail A is continuous and passes across the line of B', at an open space in the latter' occupied by sections of rail  $a b$ , arranged at opposite sides of the rail A. The sections  $a b$  are switches having a pivotal action, and when closed together occupy a somewhat higher plane than the rail A, over which they form a substantially continuous bridge or passage for the wheels of cars upon the siding B B'. When opened, they move in opposite directions away from the main track A, which is thus left entirely clear and free from any impediment.

The movement of the switches  $a b$  is effected by the following mechanism: To the switch  $b$  is attached (at a convenient distance to permit the wheel-flanges to pass between) a short section of rail,  $b'$ , arranged as shown, resting normally against the inner side of rail B', to

act as a moving-bar for the switch  $b$  when forced away from the rail B' by flanges of wheels passing on the siding. At the opposite side of the siding, against the rail B, is arranged a guard-rail,  $c$ , which has a pivotal movement, and acts also as a moving-bar for the switches  $b$  and  $a$ , through connections presently referred to, when forced away from the rail B by flanges of passing wheels.

The guard-rail  $c$  is provided with horizontal guides  $d d$ , on the former of which is arranged a spring,  $s$ , to hold it normally in position against the rail B at its free end. The guide  $d$  may also be arranged to act as an abutment to limit the movement of the rail  $c$  away from the rail B, and by reason of such limit of movement it acts as an ordinary guard-rail, to insure the proper passage of the opposite wheels, passing the bridge  $a b$  over the main-track rail A.

The connecting mechanism consists in a horizontal lever,  $e$ , pivoted between the rail B and the switches  $a b$ , with links 2 and 3 connecting its ends, respectively, with the switches  $a$  and  $b$ , and a link, 1, connecting it at or near one end with the guard-rail  $c$ . By this connection the entrance of a wheel-flange from either direction between the guard-rail  $c$  and the siding-rail B moves the latter against the force of its spring  $s$ , and by the links 1, 2, 3, and power-transmitting lever  $e$  moves the switches  $a b$  into proper position to form the bridge across the main-track rail A.

The moving-bar  $b'$ , heretofore described as an attachment to the switch  $b$ , is intended particularly to move the switches for a train coming into the main track from the siding, in which case the guard-rail  $c$  would operate at a disadvantage in leverage, as will be obvious, if required to act alone.

In Fig. 2 the pivoted lever  $e$  of Fig. 1 is replaced by a crank-shaft,  $e'$ , the link 3 being attached to a central crank, and links 1 and 2 to end cranks set opposite to the central crank. By the turning of the shaft the sectional rails  $b c$  move relatively outward, while the rail  $a$  moves relatively inward, and vice versa. Opposite the point where the flange of the wheel passes across the main rail A, I place a short piece of rail, A'', adjacent to the main rail, as a precaution against the liability of wheels adjusted on the axles at too narrow a gage

slipping down between the siding-rails at that point and forcing the pivoted bridge-rail *a* away from its contact. In such event the wheel would rest upon its flange upon the section A'' and readily take its proper bearing beyond the point of danger.

It remains to describe the plate *p*, a longitudinal section of which is shown in Fig. 3, and forms the sliding bearing for the pivotal section *a*. As indicated in the figure, its inner end toward the center of the main line of rails is formed as an inclined plane, which, when the section *a* is forced over to the position shown in Fig. 1, allows the rail *a* to drop to a lower position out of the way of danger to brake-bars or other appurtenances of passing trains.

The spring *s* may be omitted, and the automatic movement of the parts secured by the sectional rails *a* and *c*, by securing them firmly to the ties at one end in their normal position, and utilizing their natural elasticity for the purpose. Suitable plates, *p' p''*, are provided

for the sliding bearings of the rails *b'* and *c* upon the ties.

I claim as my invention and desire to secure by Letters Patent—

1. In combination with the main rails *A A'*, siding-rails *B B'*, and pivotal sections *a b*, the pivoted guard-rail *c*, and crank-shaft and connecting-links, arranged and operating substantially as and for the purpose set forth.

2. In an automatic railway-frog, the pivotal sections *a b*, the latter being provided with the actuating-tongue *b'*, in combination with the guard-rail *c*, and a transmitting-lever (or crank shaft) and connecting-links, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DANIEL H. MAHONEY.

Witnesses:

S. OSBORNE,  
L. M. HOSEA.