

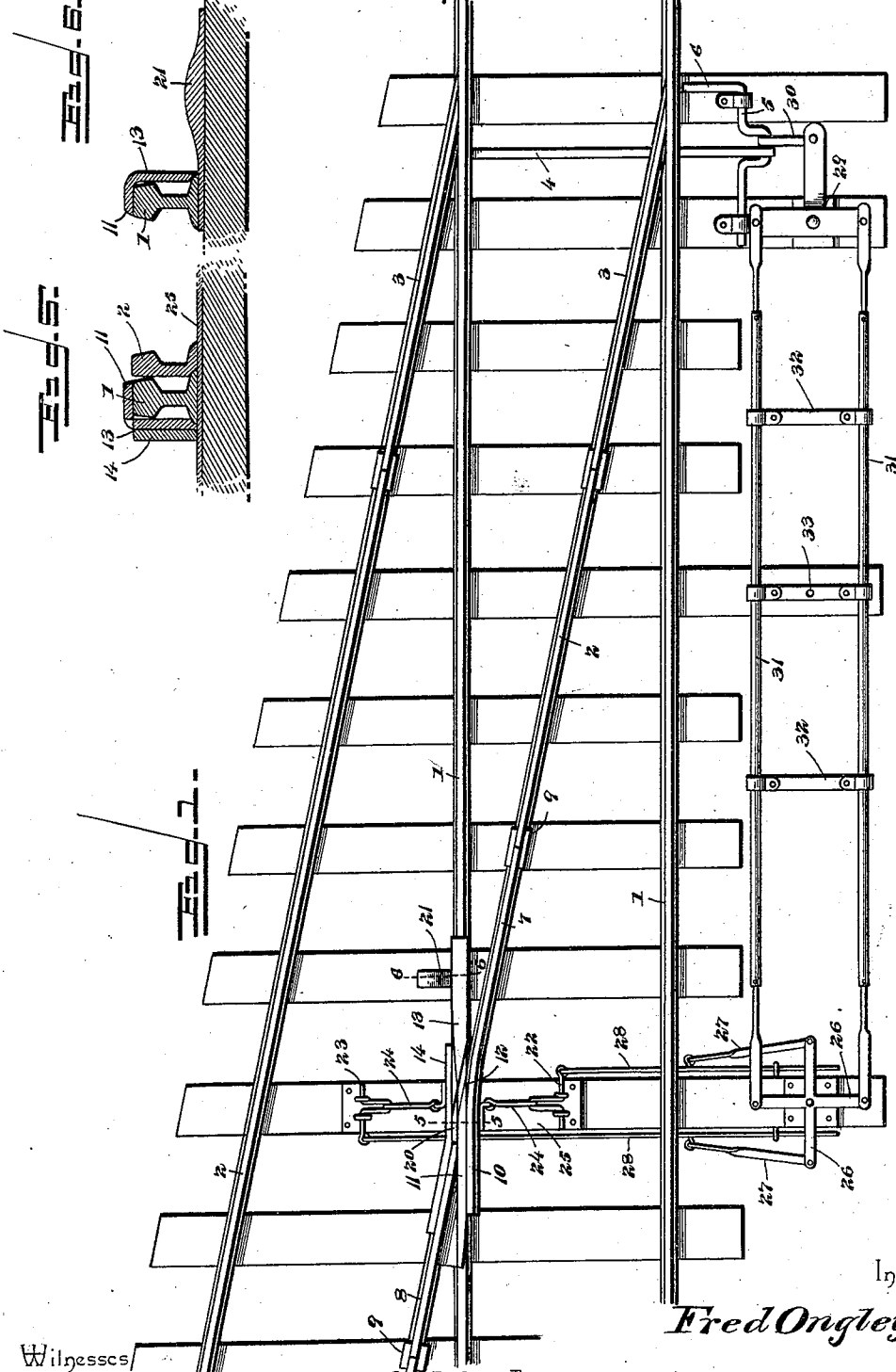
(No Model.)

2 Sheets—Sheet 1.

F. ONGLEY, Jr.  
RAILROAD SWITCH.

Patented Oct. 29, 1895.

No. 549,009.



Witnesses

*E. H. Stewart*  
*R. B. Key*

By *his* Attorneys,

*Calnow & Co.*

Inventor

*Fred Ongley Jr.*

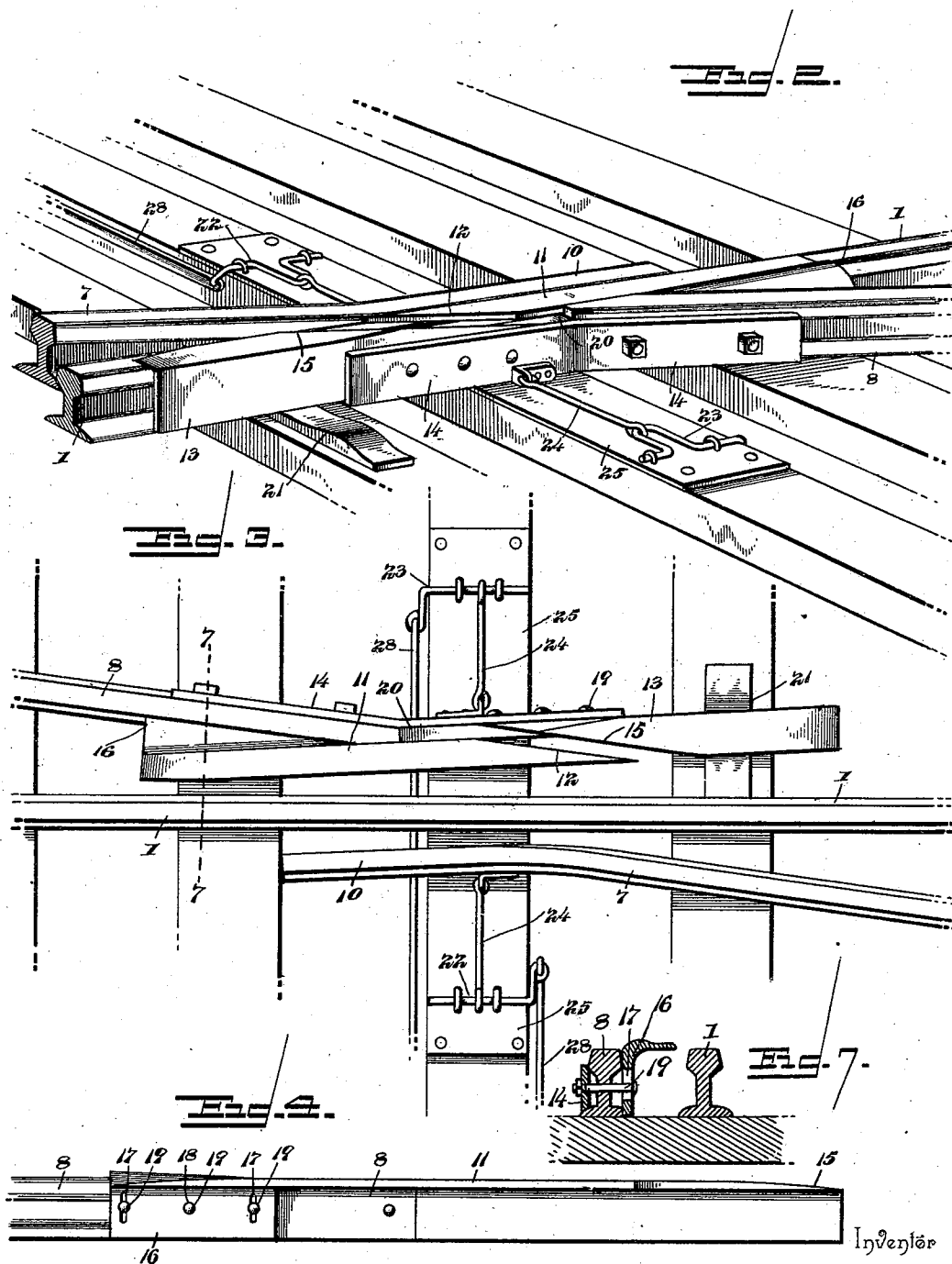
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Witnesses

E. H. Stewart  
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# UNITED STATES PATENT OFFICE.

FRED ONGLEY, JR., OF BLOOMINGTON, ILLINOIS.

## RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 549,009, dated October 29, 1895.

Application filed April 19, 1895. Serial No. 546,369. (No model.)

*To all whom it may concern:*

Be it known that I, FRED ONGLEY, Jr., a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented a new and useful Railroad-Switch, of which the following is a specification.

My invention relates to switch mechanism, and has for its object to provide a frog at the intersection of the main and siding track-rails, which, when the switch is set for the main track, is entirely removed from the main-track rail and provides a continuous track, and which, when the switch is set for the side track, provides for the passage of a train over the main track without disturbing the switch mechanism and without the risk of derailment.

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

In the drawings, Figure 1 is a plan view of a switch mechanism constructed in accordance with my invention. Fig. 2 is a detail perspective view of the frog mechanism set for the siding-track. Fig. 3 is a similar view showing the frog mechanism set for the main track. Fig. 4 is a side view of one of the frog-rails. Fig. 5 is a transverse section on the line 5 5 of Fig. 1. Fig. 6 is a similar view on the line 6 6 of Fig. 1. Fig. 7 is a similar view on the line 7 7 of Fig. 3.

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

1 designates the main-track rails, and 2 the siding-track rails, the former being continuous, and 3 represents split switch-rails, of the ordinary or any preferred construction, connected by means of a switch-bar 4 with a rock-shaft 5, having an operating-handle 6.

The frog mechanism comprises frog-rails 7, and 8, arranged in the line of the inner siding-rail and pivoted at their remote ends upon chairs 9. The frog-rail 7 is arranged between the main-track rails and is deflected at an intermediate point, as at 10, to lie parallel with the inner main-track rail when the frog is set for the siding-track, as in Figs. 1 and 2, and the frog-rail 8 extends in an opposite direc-

tion from the frog-rail 7 or toward the main track and is beveled at its free end to bear against the outer side of the inner main-track rail when the parts are in the position shown in Figs. 1 and 2. Secured to and carried by the outer frog-rail 8 is a beveled bridge-plate 11, adapted when the frog is set for the siding-track to extend over and rest upon the tread of the inner main-track rail, this bridge-plate terminating at its inner end, at approximately the elevation of the flange of a wheel from the tread of the rail, in a beveled shoulder 12, which is aligned with the inner side of the frog-rail 8. A second bridge-plate 13 is also carried by the frog-rail 8, to which it is secured by a fish-plate 14, this bridge-plate being adapted to rest upon the tread of the inner main-track rail when the frog is set for the siding-track and terminating at its inner end in an abrupt beveled shoulder 15, which is parallel with the shoulder 12 of the bridge-plate 11, and is also parallel with the inner side of the frog-rail 8.

The bridge-plate 11 is provided at one end with a depending ear 16, by which it is secured to the side of the frog-rail 8, said ear being provided with vertically-elongated bolt-openings 17 and an intermediate round bolt-opening 18, all of which are engaged by bolts 19. This provides for a slight rocking movement of the bridge-plate to allow it to rest firmly upon the tread of the main-track rail at the point which supports the weight of a car-wheel. Thus if the bridge-plate is slightly removed at its inner end from the surface of tread of the main rail, the plate will adapt itself to the position of the wheel, and thus transfer the pressure to the track-rail. The bridge-plate 13 is connected to the frog-rail 8 by the fish-plate 14 for a similar purpose to that described in connection with the bridge-plate 11. Said fish-plate has sufficient vertical elasticity to allow the bridge-plate 13 to be depressed firmly upon the tread of the main-track rail when engaged by the wheel of a car. This bridge-plate 13 is secured to the fish-plate by means of a depending flange or ear 20.

From the above description it will be seen that the frog mechanism is entirely independent in construction of the main-track rail,

whereby the latter remains continuous, as in other portions of the track, and therefore it is necessary to raise the flanges of the inner car-wheels above the tread of the main-track rail in entering or leaving the siding. In order to accomplish this with facility, the treads of the adjacent free ends of the frog-rails 7 and 8 are elevated above the plane of the main rail a distance equal to the depth of a wheel-flange. This may be accomplished by a special construction of frog-rail or by blocking an ordinary frog-rail, the former construction being adopted in the illustration. Thus the tread of the frog-rail 8 is in the plane of the upper surface of the elevated portions of the bridge-plates 11 and 13, and hence a wheel in passing from the main to the siding track is carried upward by the frog-rail 7 until at a sufficient elevation to pass to the abrupt end of the bridge-plate 11. This causes the flange of the wheel to traverse the tread of the main rail and the upper edge of the vertical flange 20 of the bridge-plate 13 until the frog-rail 8 is reached. The reverse of this operation is performed in passing from the siding to the main track.

In order that the frog-rails 7 and 8 may be held firmly in position in contact with opposite sides of the main-track rail when set for the side track, I employ a holding-block 21 secured to a cross-tie under the free end to the flange 20 of the switch-plate 13, said block being reduced at its extremities and inclined upward or elevated toward its center. This block serves to support the free end of the frog-rail 8 and prevents the jarring of passing trains from altering the adjustment of the frog after being set to either position.

The means for operating the frog may consist of connections with the operating mechanism of the switch-rails, and in the construction illustrated the same comprise opposite rocking levers 22 and 23, having loops connected by means of links 24 with the frog-rails 7 and 8, said levers being mounted upon a base-plate 25, which serves as the support for the free ends of the frog-rails, a double bell-crank lever 26 having opposite arms connected by means of pitmen 27 with horizontal slide-bars 28, said slide-bars being in turn connected to the arms of the rocking levers 22 and 23, a similar bell-crank lever 29, connected with the rocking shaft 5 by means of a link 30, and draw-rods 31, connecting said bell-crank levers. These draw-rods connect opposite arms of the bell-crank levers and are connected at intermediate points by means of links 32 to secure uniformity of movement of the rods, and one or more of these links may be pivoted at their centers, as shown at 33, to form an intermediate support and also add to the leverage of the mechanism.

It is obvious that the frog mechanism may be operated independently of the switch mechanism, if preferred; but it is equally obvious that the connection of the frog mech-

anism with the switch, whereby they are set simultaneously and correspond in their arrangement, is more convenient and is generally preferable.

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—

1. The combination with main and siding track rails, the inner main track rail being continuous, of frog-rails arranged upon opposite sides of the inner main track rail and pivoted at their remote ends, bridge-plates carried by one of the frog-rails, having abrupt beveled contiguous ends adapted to rest upon the tread of the main track rail, and yielding connections between said bridge-plates and the frog-rail, whereby said plates are adapted to yield independently to transfer the pressure of the rolling stock to the tread of the main rail, and means for operating the frog-rails, substantially as specified.

2. The combination with main and siding track rails, the inner main track rail being continuous, of frog-rails 7 and 8 pivotally mounted at their remote ends upon opposite sides of the main track rail, a bridge-plate 11 secured to the free end of the frog-rail 8 and having slotted connections therewith whereby it is capable of yielding to transfer the pressure of rolling stock to the tread of the lower rail, a second bridge-plate connected to the free end of the frog-rail 8 by a fish-plate and capable of vertical yielding movement, and means for operating the frog-rail, substantially as specified.

3. The combination with main and siding track rails, the inner main track rail being continuous, of pivotal frog-rails arranged upon opposite sides of the inner main track rail and adapted to bear at their free ends against the opposite sides of said main track rail, bridge-plates carried by one of the frog-rails and having horizontal portions to rest upon the tread of the main rail, a holding block arranged contiguous to and adapted to be traversed by one of the bridge-plates, said bridge-plate having vertical movement to adapt it to traverse the beveled surface of the holding block, and means for operating the frog-rail, substantially as specified.

4. The combination with main and siding track rails, of pivotal frog-rails arranged upon opposite sides of the inner main track rail, one of the frog-rails carrying bridge-plates adapted to bear upon the tread of the inner main track rail, rocking levers arranged upon opposite sides of the inner main track rail and connected, respectively, with the free ends of the frog-rails, slides connected, respectively, to the rocking levers, a double bell-crank lever having its arms connected with the slides, a second bell-crank lever, draw-rods

connecting corresponding arms of the bell-  
crank levers, swinging links connecting the  
draw-rods at intermediate points, and a switch  
mechanism operatively connected with the  
5 second bell-crank lever, substantially as speci-  
fied.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature  
in the presence of two witnesses.

FRED ONGLEY, JR.

Witnesses:

M. F. HUDSON,

W. B. RYLE.