

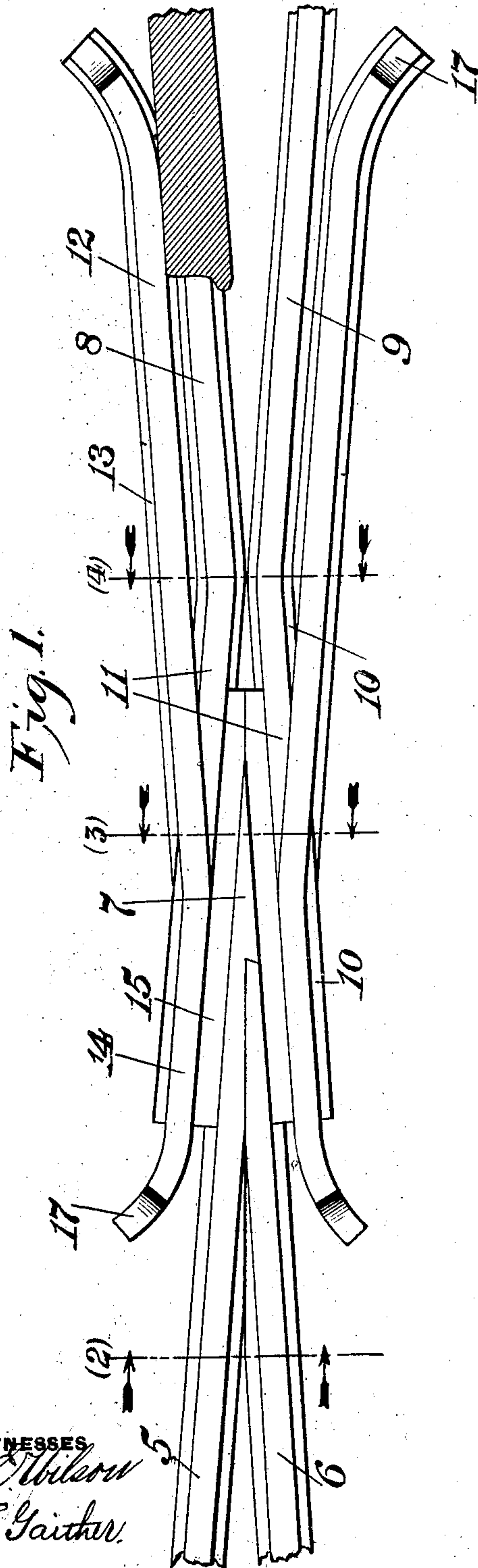
No. 812,640.

PATENTED FEB. 13, 1906.

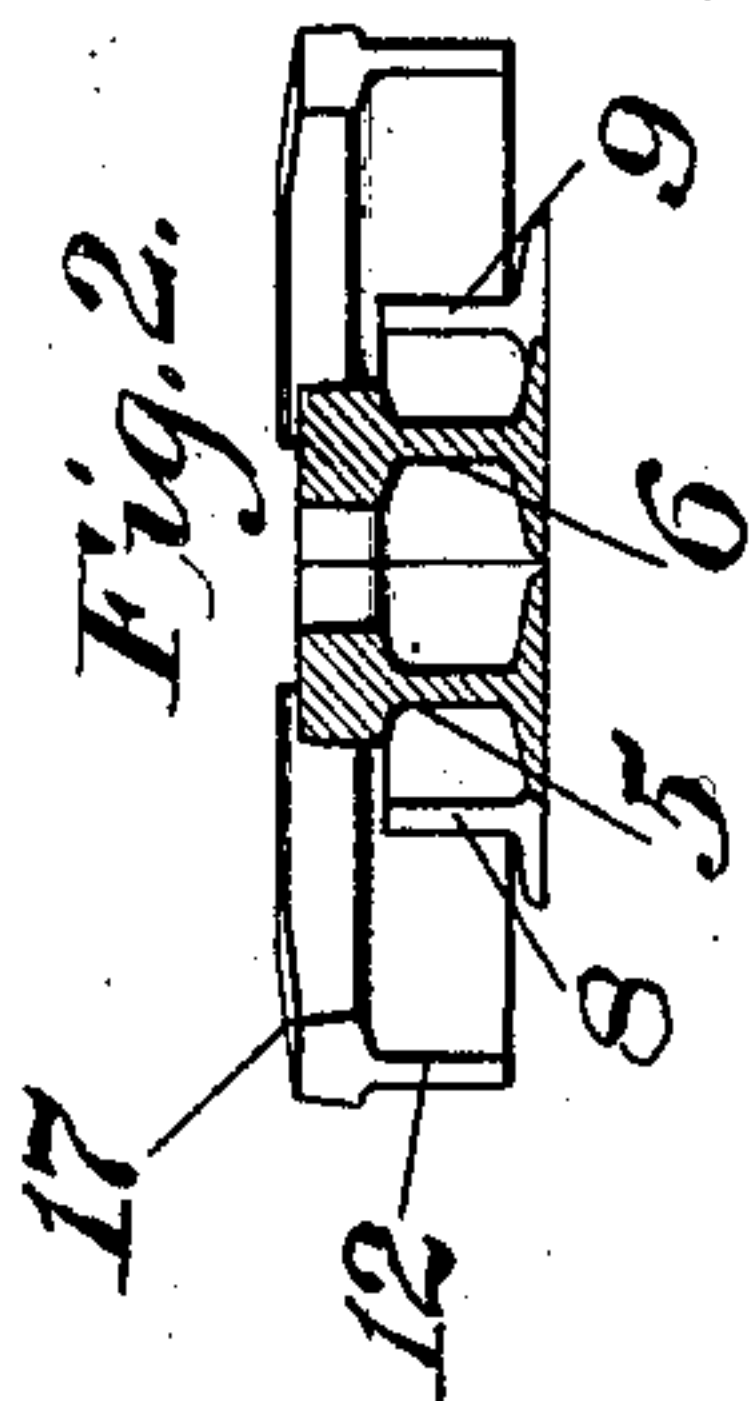
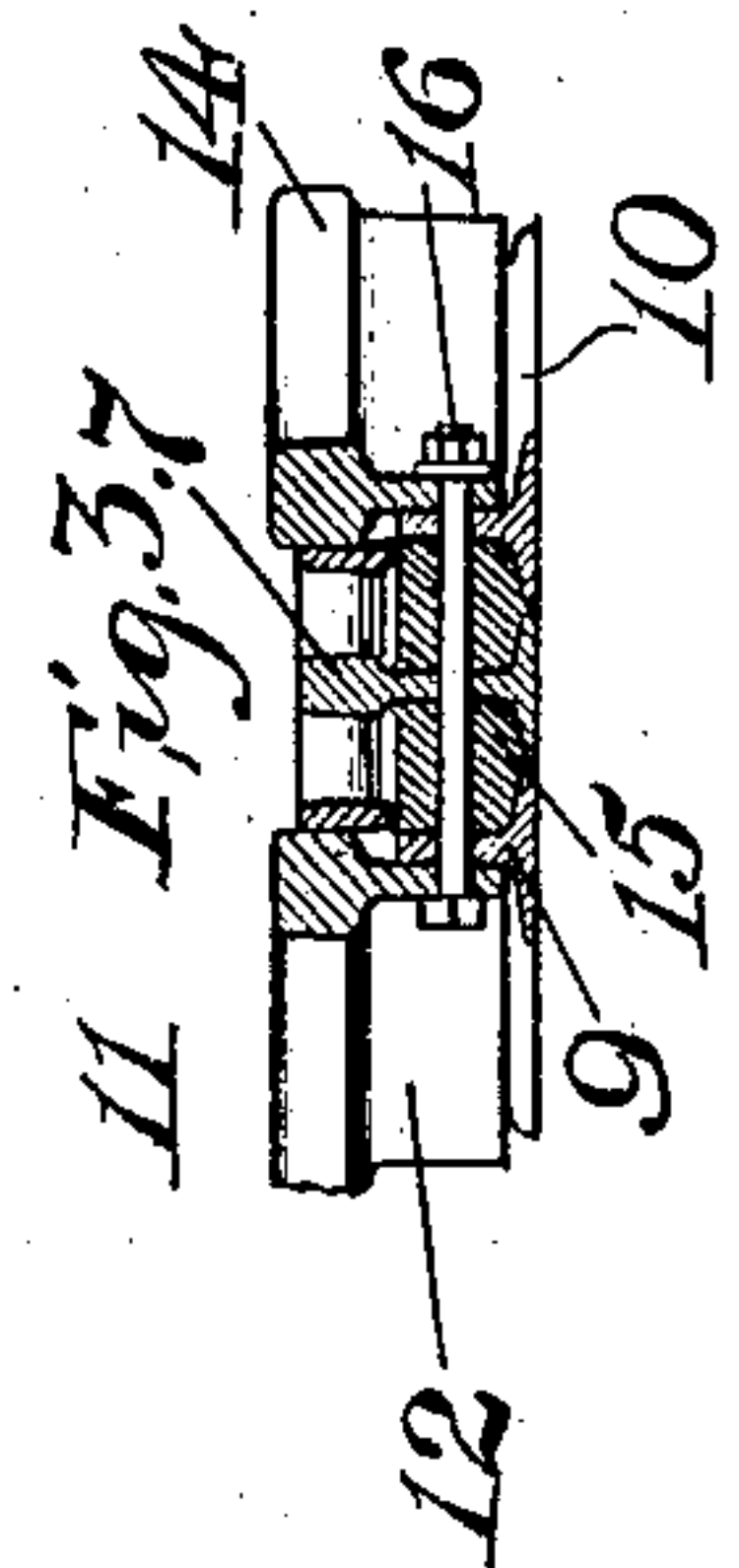
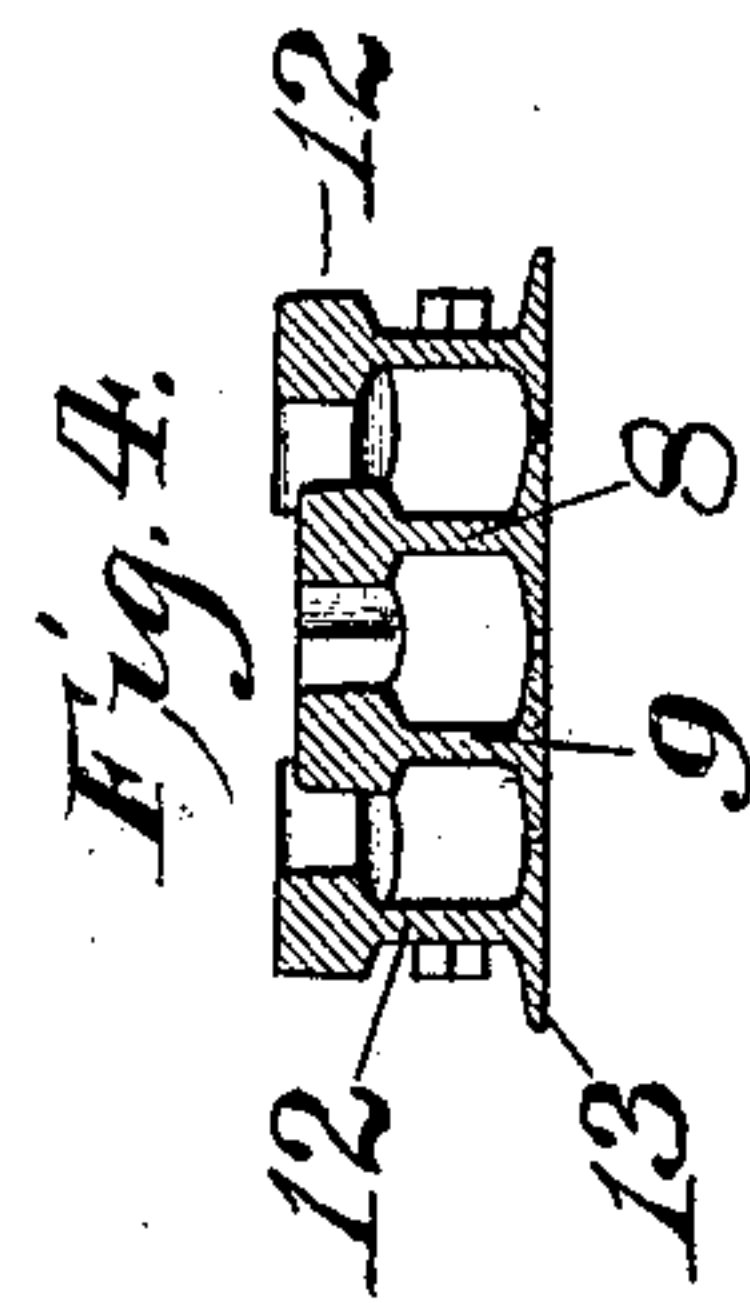
J. E. CONLEY.

RAILWAY SWITCH AND CROSSING FROG.

APPLICATION FILED AUG. 24, 1905.



WITNESSES  
*J. E. Conley*  
*F. E. Gaither*



INVENTOR  
*John E. Conley*  
By *Paul Symmetts*  
*Att'y.*



# UNITED STATES PATENT OFFICE.

JOHN E. CONLEY, OF ARCOLA, ILLINOIS.

## RAILWAY SWITCH AND CROSSING FROG.

No. 812,640.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed August 24, 1905. Serial No. 275,522.

*To all whom it may concern:*

Be it known that I, JOHN E. CONLEY, a citizen of the United States, residing at Arcola, in the county of Douglas and State of Illinois; have invented certain new and useful Improvements in Railway Switch and Crossing Frogs, of which the following is a specification.

My invention relates to the joints or crossings of railway rails, and particularly to the means for safely guiding the wheel on the rails at the frog points. The objects of the invention are, to provide a guard to engage the tread rim of the wheel while the tread runs on the rail as is customary; to provide guards which will prevent the jumping of the rail by loose or broken wheels or broken flanges, increasing safety in railway-crossings; to provide maximum support for the tread of the wheels along the entire distance of the frogs; to provide a guard for the wheel upon both sides, and to generally improve the construction and operation of railway frogs. These objects and other advantages to hereinafter appear, I attain by means of the construction illustrated in a preferred form as applied to an acute-angle crossing, in the accompanying drawing, wherein—

Figure 1 is a plan view of the crossing, and Figures 2, 3, and 4, are vertical cross sections taken through the rails respectively along the lines (2) (3), and (4) of Figure 1.

In the present practice in railway crossings it has been customary to provide a guard engaging the flange of the wheel on the opposite side of the track from the frog, to pull the wheel over. I find it much safer to provide a guard to engage the rim of the tread of the wheel itself, and thus avoid the danger from sprung axles or loose wheels, the wheel being itself directly guarded when it comes to the point of the crossing. The invention is applicable to all kinds of crossing points, whether they are rigid, spring-rail, or any street railway crossing, and it is of course applicable to any acute-angle frog or crossing.

In the drawing it will be seen that the ordinary rails 5 and 6 are shown coming to a point and spliced at 7, as is customary. The co-operating portions of the rails, 8 and 9 respectively, are provided with a bend as shown, and project forward in the parts 11 so as to run parallel with the point 7 on the two opposite sides, leaving room for the flange of the wheel, very much as is customary in such devices. For the guard rail, I use the

high rail 12, having a wider web and higher than the rails 8, 9, and it runs parallel with the right hand portion of the frog, up past the point 7. From this point out, the bottom flange of the rail 12 is cut off, as will be clear from Figure 3, and it is spliced and bolted to the web of the rail 8, which is also cut and continued beyond the point 7 only in its web and flange, the head of the rail being cut off as will be clear from said figure. That is, the rails 8 and 12 respectively are spliced together so that beyond the point 7 the head of the rail 12 is supported by the flange and web of the rail 8. The head of the rail 11 and part of the head of the rail 12 lie side by side for a certain distance as shown in Figure 3 and thus a support for the tread of the wheel is provided all the way until the wheel comes upon the point 7 of the spliced rails 5 and 6. The flange 13 of rail 12 being removed to allow of the head 14 being supported upon the web and flange 10 of the rail 8. Usual filler blocks 15 are used to connect and stiffen the device and they are preferably bolted together with both side rail webs by means of bolts 16, or fastened to a bottom plate by means of rivets or a combination of both. The ends of the guide rails 12 are at both ends planed off with a slant as shown at 17.

By this construction it will be seen that when the wheel comes in as indicated in Figure 1, moving toward the frog point, the rim of the wheel will be engaged directly by the guard rail 12, and after passing the point marked by the line (4), both the tread and the flange of the wheel will be confined, and the tread is supported all along engaging the point 7 before it leaves the top of the rail surface 11, and continually keeping the side of the rim against the guard rail 12 until the flange has entirely come upon the rails 5 and 6 at the point 7 in the regular order. As the wheel does not depend at all on the flange of its mate to pull it over or hold it in place, the wheel is positively and firmly confined to its position and safety supported throughout the crossing. Other advantages of the device will readily occur to those familiar with the art.

Having thus described my invention and illustrated its use, what I claim as new, and desire to secure by Letters Patent, is the following:

1. A railway frog having means to support the tread of the wheel throughout the



entire distance and to engage the rim of the wheel tread to guide and confine it to position, substantially as described.

2. The combination with the rail point 7 and the straddling rails 8 and 9, of the spliced guard rails 12 provided with a head and arranged to engage the rim or tread of the wheel to confine it to position, substantially as described.

3. In a railway frog, the combination with the rails 8, 9, flared and having their heads cut off beyond the frog point, of the guard rails 12 having the flanges cut off beyond the frog point and spliced to the first mentioned rails, as, and for the purpose described.

4. In a railway crossing, the combination with the spliced point 7 of the meeting rails 5, 6, of the straddling rails 8, 9, having their heads cut off beyond said point, and the guard rails 12 having their flanges cut off and spliced upon the said straddling rails, whereby the said guide rail heads directly join the

heads of the supporting rails 8, 9, substantially as described.

5. In a railway crossing, the combination with the meeting rails and the straddling rails 8 and 9 flared and enveloping the same, and spliced upon the narrow straddling portions to a supplementary rail 12 continuing as guard rails beyond the meeting point, substantially as described.

6. In a railway frog, the combination with a supporting rail having its head removed where it laps over the frog point, of a guard rail having its flange removed in part and spliced on the said supporting rail beyond said frog point, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

JOHN E. CONLEY

Witnesses:

G. R. KYES,  
WILLIAM A. STOWE.