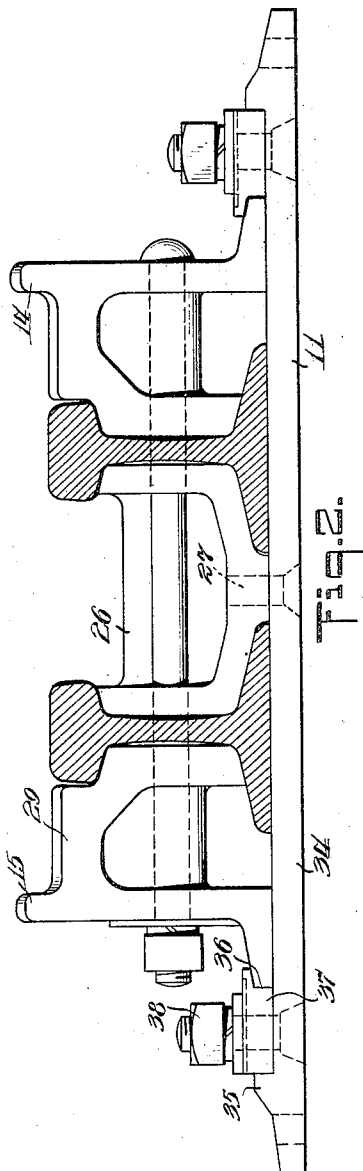
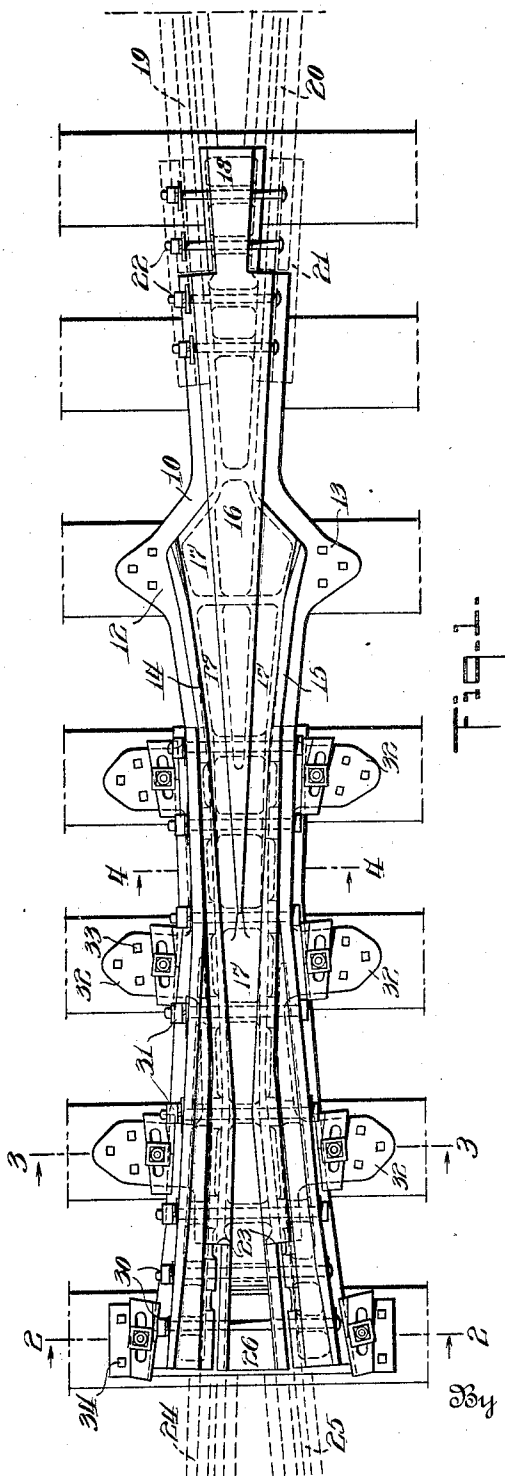


J. B. STRONG.
RAILROAD CROSSOVER.
APPLICATION FILED AUG. 28, 1920.

1,382,868.

Patented June 28, 1921.
2 SHEETS—SHEET 1.

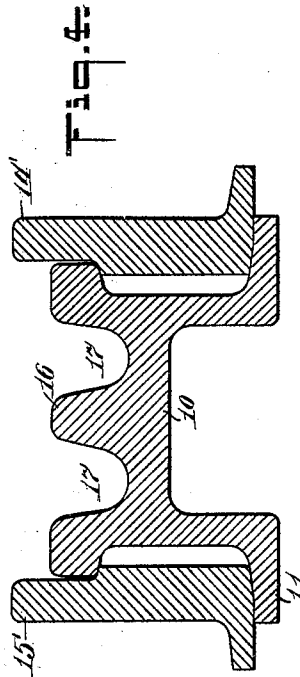
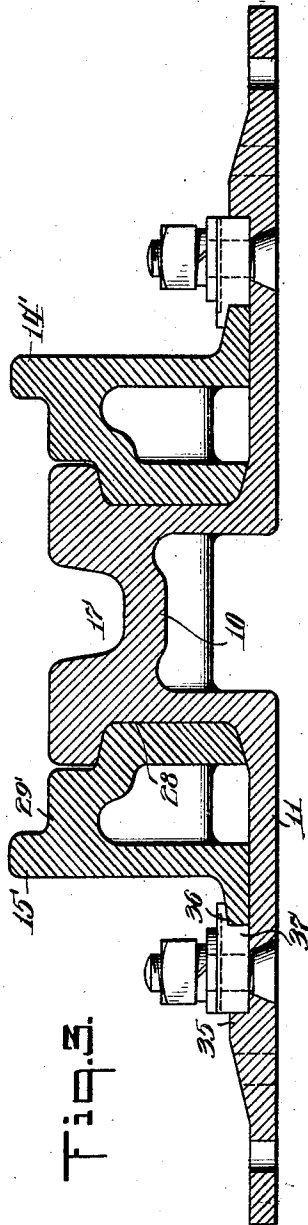


By *James B. Strong* Inventor
Albert M. Austin his Attorney

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UNITED STATES PATENT OFFICE.

JAMES B. STRONG, OF HILLBURN, NEW YORK.

RAILROAD-CROSSOVER.

1,382,868.

Specification of Letters Patent. Patented June 28, 1921.

Application filed August 28, 1920. Serial No. 406,605.

to all whom it may concern:

Be it known that I, JAMES B. STRONG, a citizen of the United States, and resident of Hillburn, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Railroad-Crossovers, of which the following is a specification.

The invention relates in general to a railroad cross-over of the type which includes a solid frog provided on opposite sides with wheel engaging members for assisting the flanged wheels of the railway vehicle past the crossover and which, due to their function of protecting the flanges of the wheels, will be referred to hereinafter by their commercial name of flange guards and easer joints.

In one standard form of such cross-overs the flange guards are formed integrally with the solid frog and this form of construction is giving satisfactory service and is economical equipment especially where traffic is light.

It will be understood, however, that in most locations the traffic is largely in one direction with a resulting wear only on one of the flange guards and frequently the entire frog must be scrapped when a part becomes worn.

One of the objects of the invention is to provide a frog construction which will possess all of the advantages such as rigidity of construction inherent in these standard, solid, one-piece frogs but which at the same time will feature economy in use under heavy traffic conditions in that it will permit the ready replacement of the part or parts which are subjected to severe wear without the necessity of scrapping the entire frog when the worn part becomes inoperative.

Broadly, I attain this object by forming a flange guard and the easer joint in one-piece and demountably securing the same to one or both sides of the main part of the solid standard form of frog, by some approved form of locking means.

Another object of the invention is to provide a frog the ends of which are constructed to receive the contiguous ends of the usual service rails without the necessity of any refined interfitting of parts and to provide for positively securing the same in position.

I attain this phase of the invention by providing at opposite ends of the frog, rail receiving seats for containing the usual

squared off ends of the service rails and securing the service rails rigidly in position engaging the frog by means of the separable flanged guard at one end of the frog, or, as an alternative construction by means of the usual angle bars at the opposite end of the frog.

The invention contemplates the utilization of fastening means for demountably securing the flange guard to the frog and service rails in a manner to eliminate rattle and to secure solidity in the construction and an easy ride to the vehicle as the wheels pass across the frog.

I attain this phase of the invention most conveniently by extending laterally from the frog a base plate which may be integral with the frog or a separate plate secured to the frog and which in turn supports fastening means preferably in the form of wedge clip tie plates for securing the flange guard in tight bearing engagement with the frog and with the contiguous ends of the service rails.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawings and in part will be more fully set forth in the following particular description of one form of mechanism embodying my invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings:—

Figure 1 is a plan view of a frog construction illustrating a preferred embodiment of the invention; and

Figs. 2, 3 and 4 are each transverse sectional views taken respectively on the lines 2—2, 3—3 and 4—4 of Fig. 1.

In the drawings, there are shown the usual supporting ties at the cross-over, positioned on which is the frog 10, fitted between the service rails, as is usual in such constructions. The frog is of a one-piece solid construction and includes a base plate 11 relatively wide at one point indicated at 12 to form a tie engaging support 13 and reducing in width toward opposite ends. Wheel rim engaging members project upwardly from the base plate, two of which members are transversely spaced apart and are slightly curved from the wide portion 12 toward the toe end of the frog to form frog rails 14 and 15. The third rim engaging surface is in

the form of a long triangle in plan, and extends from adjacent the heel end of the frog to a point mid-way of the length of the frog rails to form the usual point 16. It is understood of course that the frog is recessed between opposite sides of the point and between the frog rails to form the usual flange receiving grooves 17. The character of the construction as thus far described is drawn substantially along known lines and novelty is not predicated upon this construction *per se*.

The heel end of the frog is provided centrally thereof with a longitudinal extension 18 which provides a transverse abutment for receiving the inner sides of service rails 19 and 20 shown in dotted outline. The usual angle tie plates 21 also shown in outline lap the sides of the broad end of the point and the service rails and are fastened thereto by the usual through bolts 22. The parts are so proportioned that the tread surface of the service rails is continuous with the tread surface of the point as is usual in such constructions.

The toe ends of the frog rails are squared off, as shown at 23, against which abut the squared off ends of the opposite service rails 24 and 25. The base plate 11 at this toe end of the frog is extended longitudinally to receive the service rails as shown more particularly in Fig. 2 and the rails are maintained in their transversely spaced apart relation by a filler block 26 which may be fastened to the base plate 11 by means of the rivet structure 27, as shown in Fig. 2. It is obviously within the scope of the invention, however, to form the filler block 26 integrally with the base plate but the illustrated form is preferable under certain circumstances for commercial reasons. The outer side of each of the frog rails simulate to some extent the outer side of the I-beam type of rail to provide a guard engaging face 28.

This face is engaged by a relatively long rolled steel formed strip 29 constituting a combined flange guard and easer joint which is designed to be positioned upon opposite sides of the frog and when in the illustrated position extends from a point midway between the portion 12 and the angle of the point, past the point and beyond the toe ends 23 of the frog rail. The guard 29 is provided with an inclined wedge-shaped top surface 29' for receiving the wheel rim and has an upstanding guard flange 14' and 15' at its outer edge for engaging the side of the wheel rim.

The projected portions of the flange guard are secured together and to the service rails 24 and 25 by means of through bolts 30 one of which passes through the filler block 26.

The frog is provided with longitudinally spaced apart sleeves formed integral there-

with and through bolts 31 are passed through the flange guards on opposite sides and through the sleeves. The bottom plate 11 is extended on opposite sides to form a series of fastening plates 32 disposed to rest on the ties and fastened thereby by spikes passed through the spike holes 33.

At the left of the showing in Fig. 1 is shown a slightly modified form in which the plate 34 is separate from the frog.

The plates 32 and 34 are provided at opposite ends with upstanding shoulders 35 between which and the adjacent edge 36 of the flange guard is positioned a wedge clip 37 secured in position by fastening bolts 38 as is well known in such securing structures.

Having described my invention, I claim:

1. In a railway frog construction, the combination of a frog having a base portion provided with a service rail seat projecting longitudinally from the body of the frog at one end, a wheel rim engaging part projecting upwardly from said base portion and having a blunt end adapted to have a service rail abut the same endwise, means fixed to the base portion for limiting transverse movement of the service rail in one direction, said frog provided with a plurality of bolt receiving apertures spaced along the same for securing a flange guard in place, and tying means secured to said wheel rim engaging part and projecting beyond the same adapted to secure the service rail ends in position on the seat and in engagement with said limiting means.

2. In a railway frog construction, the combination of a frog having a base portion provided with a service rail seat projecting longitudinally from the body of the frog at one end, a wheel rim engaging part projecting upwardly from said base portion and having a blunt end adapted to have a service rail abut the same, means fixed relative to the base portion for limiting transverse movement of the service rail in one direction, said frog provided with a plurality of bolt receiving apertures spaced along the same for securing a flange guard in place, and a flange guard secured to said wheel rim engaging part and projecting beyond the same adapted to secure the service rail end in position on the seat and in engagement with said limiting means.

3. In a railway frog construction, the combination of a frog having at the toe end a pair of frog rails integrally connected and provided with a pair of service rail-receiving seats at the ends of the frog rails, service rails located in said seats and a removable flange guard for securing the service rails in position on said seat.

4. In a device of the class described, the combination with a one-piece frog including frog rails and a frog point integrally connected, of service rails constituting continua-

tions of the frog rails and flange guards demountably secured to the outer faces of the frog rails and constituting tie plates for securing the service rails to the frog.

5 5. In a device of the class described, the combination with a one-piece frog including frog rails and a frog point integrally connected, of service rails constituting continuations of the frog rails and flange guards demountably secured to the outer faces of the
10 the frog rails and wedging means for securing the flange guards to the frog and to the service rails.

6. An article of manufacture for use in
15 connection with a solid railway frog provided with a frog rail, said article constituting a wheel flange guard and provided with a wheel rim receiving surface converging in width from one toward the other end,
20 means for securing the article to the frog and constituting also a tie plate for securing a service rail to the frog.

7. A hollow flange guard including a
25 wheel rim tread receiving surface and two upstanding walls, the outer of which projects above the surface to provide a flange

for engaging the side of the wheel rim, said guard provided with bolt holes for receiving bolts used in fastening the flange guard in operative position.

8. A hollow flange guard including a
wheel rim tread receiving surface and two upstanding walls, the outer of which projects above the surface to provide a flange
35 for engaging the side of the wheel rim, said guard provided with bolt holes for receiving bolts used in fastening the flange guard in operative position and provided with a base flange adapted to be engaged by flange
40 fastening means for securing the flange guard in place.

9. In a device of the class described, the combination of two pre-formed members, one member constituting a one-piece railway frog and the other member constituting a
45 one-piece combined flange guard and easer joint, and a wedge clip tie plate for securing the members in operative position.

Signed at New York, in the county of New York and State of New York, this
50 23rd day of August, A. D. 1920.

JAMES B. STRONG.