

July 26, 1960

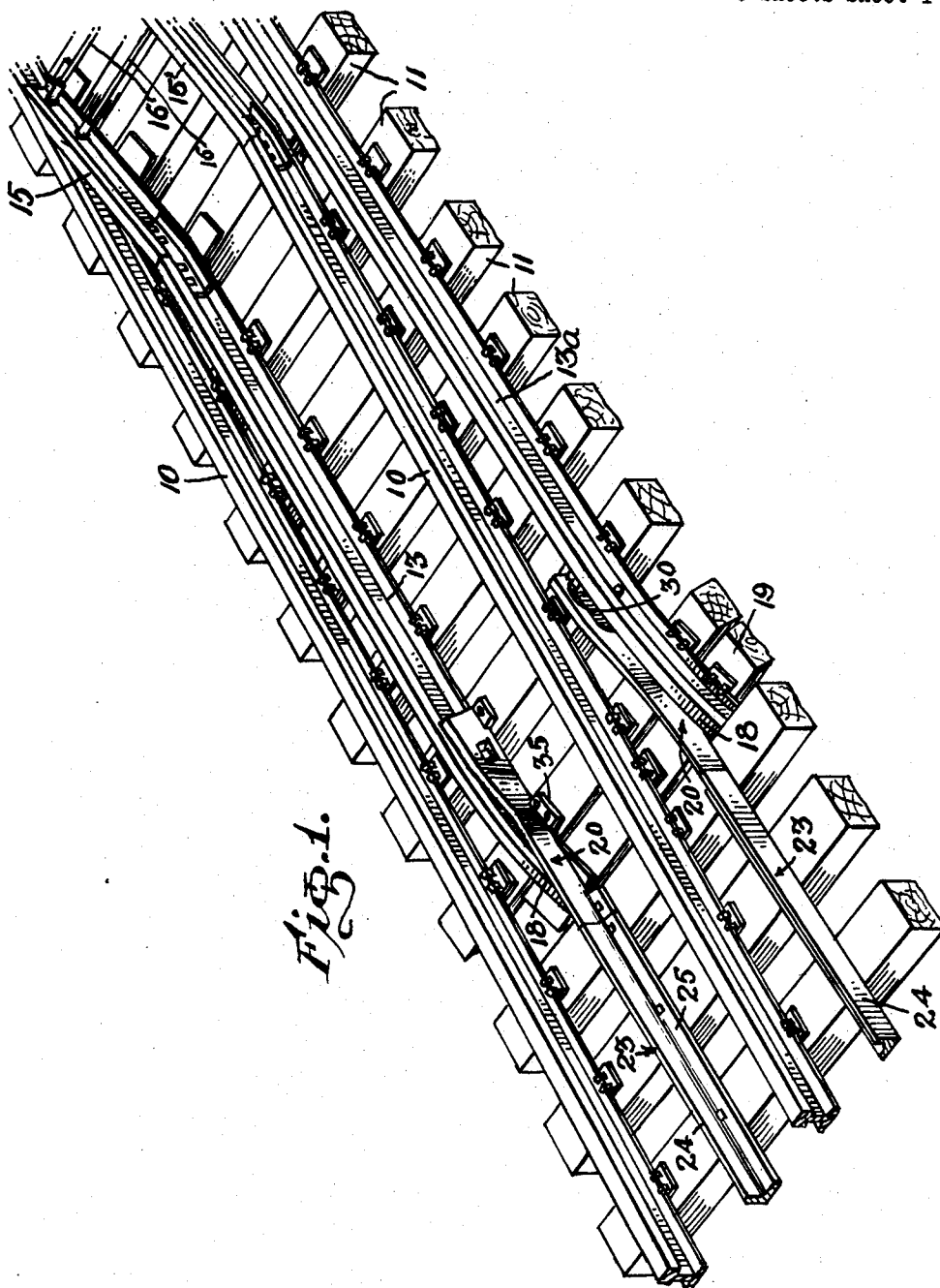
E. J. O. SALMI

2,946,882

DERAIL WITH BUILT-IN REPLACERS

Filed May 8, 1957

3 Sheets-Sheet 1



INVENTOR.
Eino Jacob O. Salmi

July 26, 1960

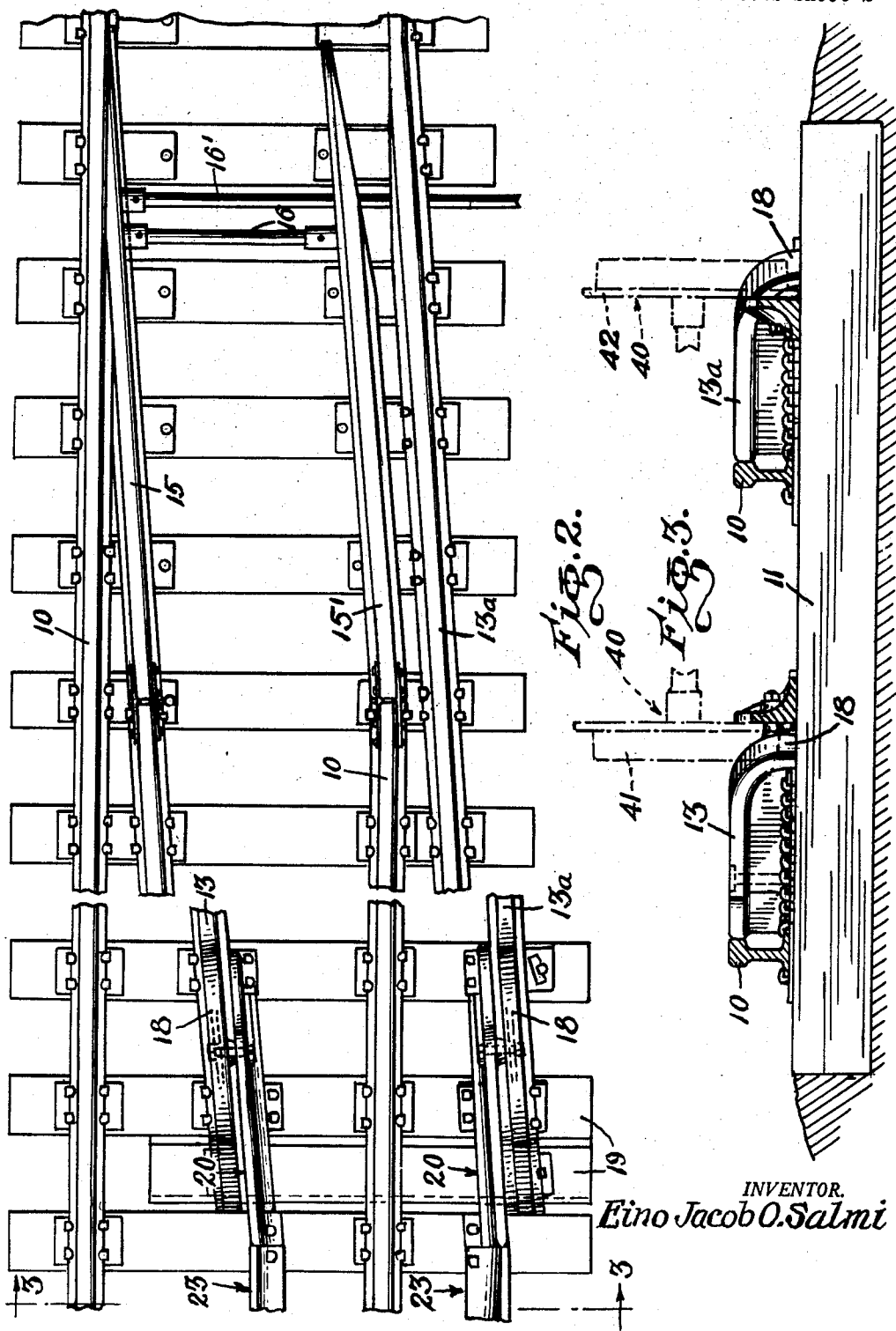
E. J. O. SALMI

2,946,882

DERAIL WITH BUILT-IN REPLACERS

Filed May 8, 1957

3 Sheets-Sheet 2



July 26, 1960

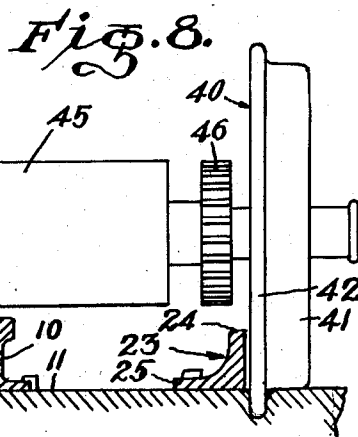
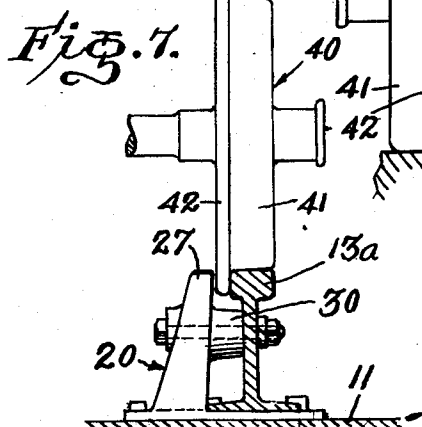
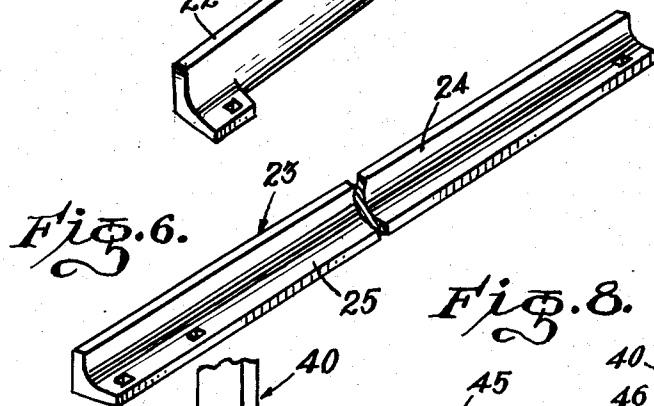
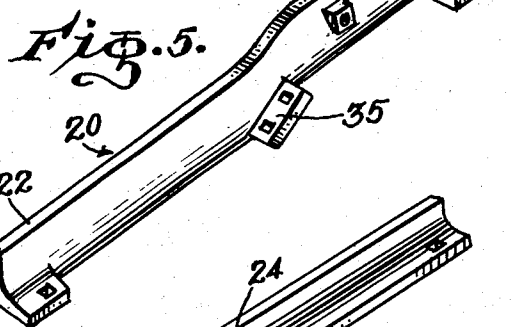
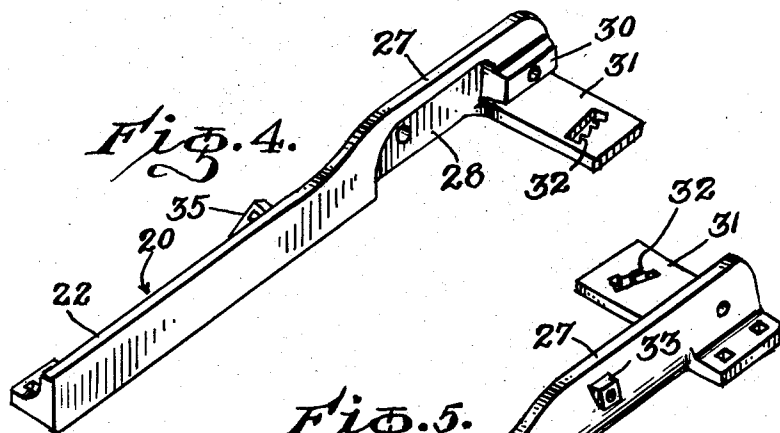
E. J. O. SALMI

2,946,882

DERAIL WITH BUILT-IN REPLACERS

Filed May 8, 1957

3 Sheets-Sheet 3



INVENTOR.
Eino Jacob O. Salmi

1

2,946,882

DERAIL WITH BUILT-IN REPLACERS

Eino Jacob O. Salmi, 227 E. Brock St., Fort William,
Ontario, Canada

Filed May 8, 1957, Ser. No. 657,818

8 Claims. (Cl. 246—163)

This invention relates to railway equipment, and more particularly to a device for derailing and rerailing rail vehicles.

It is an object of the present invention to provide a derail having built-in replacers whereby a rail vehicle after being derailed by the device may be rerailed in a simple and efficient manner.

It is another object of the present invention to provide a railway derailing and rerailing device of the above type wherein provision is made for locomotives of various types which will be derailed by this device and also guided in a definite direction on the ties, thus preventing wheels from leaving ties when in the act of rerailing so no extra damage will result.

Other objects of the invention are to provide railway apparatus bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing in which:

Figure 1 is a perspective view of the railway siding embodying apparatus made in accordance with the present invention;

Fig. 2 is an enlarged fragmentary top elevational view of a portion of the apparatus shown in Fig. 1;

Fig. 3 is a transverse cross-sectional view taken along the line 3—3 of Fig. 2;

Fig. 4 is a perspective view of a replacer made in accordance with the present invention;

Fig. 5 is a view similar to Fig. 4, showing the opposite side of the replacer;

Fig. 6 is a perspective view of a rerail adapted for use in association with the apparatus of the present invention;

Fig. 7 is a rear elevational view, partly in section, of a replacer in operative use; and

Fig. 8 is a transverse cross sectional view showing the manner in which the apparatus maintains a locomotive upon the ties of the railway.

Referring now more in detail to the drawing, and more particularly to Figs. 1 and 2 thereof, a pair of spaced parallel rails 10 forming a railway siding are shown in operative association with a derailing and rerailing device made in accordance with the present invention. A spaced parallel pair of transferring rails 15 and 15' are shown in Fig. 2. The transferring rail 15 is pivotally connected to derailing rail 13 as shown in Figs. 1 and 2. The other end of rail 15 is in contact with siding rail 10 while the transferring rail 15' with its free end in open position from derailing rail 13a. With the transferring rails in the position described above, it is set for derailing the train. These rails 15 and 15' are connected together by rod 16 and they work in unison by switch rod 16'. When the transferring rails 15 and 15' are in opposite position to that described

2

above, the train can continue on siding rails without being derailed.

The opposite end of each derailing rail 13 or 13a is provided with a downwardly turned portion 18 that extends below the upper level of the rails and ties. A separate additional tie 19 reinforces the outer downwardly extending extremity of each of these bends 18 so as to prevent damage thereto when strained by exceptionally heavy loads. A replacer 20 is associated with each downwardly turned end of the derailing rails to facilitate the rerailing of a derailed vehicle.

As is more clearly shown in Figs. 4 and 5, each replacer 20 is provided with a substantially horizontal replacer rail portion 22 that tapers upwardly and increases in thickness to define a guide flange 27. This flange 27 is slightly higher than the replacer rail portion 22, and the replacer rails 23 which are provided with a vertical web 24 and horizontal securing web 25. However, below the upper limit of this thickened flange 27, a recess 28 is provided to provide clearance. When placed in association with the end of the rail 13, a spacer lug 30 provides sufficient clearance between the flange 27 and the rail 13 to permit the passage of the flange 42 of a wheel 40 therethrough. This lug 30 is apertured to provide means for securing the adjacent portions of the replacer and derailing rail together. An enlarged fastening flange or plate 31 is provided with an angularly related slot 32 to facilitate the driving of a rail spike thereto and into proper engagement with the rail ties 11. An apertured boss 33 provides for flat face engagement of a securing bolt that is also used to secure the replacer. Intermediate the ends of the replacer, an upwardly inclined flange 35 is provided with spike receiving openings for receiving spikes that may be driven into the tilted reinforcing tie 19.

As is shown in Fig. 3, the wheels 40 of a derailed vehicle are caused to leave the side rails 10, and due to the position of the transfer rails 15 and 15' (shown in Fig. 2), proceed onto the derailing rails 13, 13a and then to the position shown in Fig. 8 wherein the flanges 42 of the wheels straddle the rerailing rails 23. It is this engagement that prevents the treads 41 of the wheels from leaving the ties of the trackway. In rerailing the vehicle, the reverse procedure is followed. As such, the wheels are guided along the rerailing rails 23 until the flanges 42 are received between the adjacent portion of the replacer 20 and the downwardly turned end 18 of the derailing rails. Continued movement, however, causes the tread 41 of the wheels to ride upwardly along the inclined surface 18 until the flanges 42 clear the ties. During this movement, the guideway defined by the adjacent portions of the replacer 20 and the derailing rails 13 maintain the parts in proper relationship. As is clearly shown in Fig. 8, the upper levels of the respective elements are so disposed that they do not contact the traction motors 45 or traction gears 46 of a rail locomotive. Accordingly, in use, damage is minimized. If desired, a runaway car or locomotive that has been inadvertently derailed can be rerailed by using one or more cars as reachers to pull them back upon the derailing rail.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. In a railway having a first pair of parallel rails supported on ties, a derailing and rerailing device comprising a second pair of parallel rails used for derailing and rerailing railway cars, each of said second pair of rails having one end switchably connected to one rail of said first pair whereby in one position wheels of a railway

vehicle will switch from the first pair to the second pair of rails, each of the ends of the rails of the second pair being connected to different rails of the first pair, each rail of the second pair also having a downwardly turned portion on its opposite end extending below the level of said first pair of rails and down to substantially the same level as that of the ties, a pair of substantially parallel replacers located between the pair of second rails, each replacer located adjacent a different corresponding rail of the second pair and rigidly connected in a position generally parallel thereto, said replacer located so that at least a part of the replacer is adjacent the downwardly turned portion of its corresponding rail of the second pair, said replacer having a vertical web that tapers downwardly in the same direction as the downwardly turned end portion of the second pair of rails, each of said replacers having a portion thereof spaced apart from its corresponding rail of said second pair and so constructed and arranged as to define a guide way therewith for slidably receiving the flange of a rail wheel therebetween, a pair of parallel guide rails generally parallel to said replacers and located at the ends of the replacers opposite the second pair of rails, each of said guide rails having a vertical flange for guiding a rail wheel.

2. In a railway having a first pair of parallel rails and having supporting ties underneath, a derailing and rerailing device comprising a second pair of parallel rails used for derailing and rerailing railway cars, each of said second pair of rails having one end switchably connected to one rail of said first pair whereby a railway vehicle will switch from the rails of the first pair to the second pair, each of the ends of the rails of the second pair being connected to different rails of the first pair, each rail of the second pair also having a downwardly turned portion on its opposite end extending below the level of the first pair of rails and down to substantially the same level as that of the ties, a pair of substantially parallel replacers located between the pair of second rails, each replacer located adjacent a corresponding rail of the second pair and rigidly connected in a position generally parallel relative thereto, each of said replacers having a vertical web that tapers downwardly in the same direction as the downwardly turned end portion of the second pair of rails, each of said replacers having an elongated guide rail portion which is generally parallel to the center line of the first pair of tracks, each of the guide rail portions being lower in height than the portion of the replacer adjacent the down turned end, each of the replacers having a portion thereof spaced apart from its corresponding rail of said second pair and so constructed and arranged as to define a guide way therewith for slidably receiving the flange of a rail wheel therebetween, each of said guide rail portions being lower in height than the portions of the replacer adjacent to down turned end, the guide rail portions being closer together than the second pair of rails so that treads of a pair of wheels of a railroad vehicle straddle the guide portions and guide the vehicle in a direction generally parallel to the first pair of rails, and a plurality of extra ties spacing apart the regular ties of the trackway located under and secured to the down turned end portions and the replacers.

3. The combination defined in claim 2 in which the guide rail portions are supported by common ties and each guide rail portion is securely fastened to each supporting tie so that wheels of derailed vehicle do not spread the ties substantially apart.

4. The combination defined in claim 3 in which each of the guide rail portion comprises an elongated rail with an L-shaped cross section and one of the sides of the L is the vertical flange for guiding the flange of a railway wheel.

5. In a railway having a first pair of parallel rails and a second pair of relatively shorter parallel rails supported on common ties in which each of the second pair of rails has one end switchably connected to a corresponding rail

of the said first pair, each of the ends of the rails of the second pair being connected to a different rail of the first pair, and each rail of the second pair also having a down turned end portion on its opposite end which is used to derail and rerail railway vehicles; the combination therewith of a pair of substantially parallel replacers located between the pair of second rails, each replacer located adjacent to a corresponding rail of the second pair and rigidly connected in a position generally parallel thereto, each of said replacers spaced apart from the second rail adjacent the down turned ends of the second rail to define a guide way for slidably receiving a flange of a rail wheel therebetween, each of said replacers having a portion adjacent the down turned end of the second rail and having a vertical web which decreases in height adjacent the down turned ends, each of said replacers having a guide rail portion extending beyond the down turned end of the second rail and being generally parallel to the first pair of rails, each of said guide rail portions being lower in height than the second pair of rails.

6. A combination as defined in claim 2 in which the vertical web of replacer has an outer side next to its corresponding surface of its vertical web rail of the second pair, the outer side rubbing against the inner face of a locomotive wheel to prevent excess lateral movement of the wheel with respect to its axle.

7. In a railway having a first pair of parallel rails supported on ties, a derailing and rerailing device comprising a second pair of generally parallel rails used for derailing and rerailing railway cars, each rail of the second pair also having a downwardly turned portion on its opposite end extending below the level of said first pair of rails, means for switchably connecting said second pair with said first pair of rails whereby a railway vehicle can be switched from one of said rail pairs to the other, means for guiding a railway locomotive having a traction gear and a traction motor without damage from the second pair of rails to the level of the ties, said means comprising a pair of substantially parallel replacers located between the pair of second rails, each replacer located adjacent a different corresponding rail of a second pair and rigidly connected in a position generally parallel thereto, said replacer so constructed and arranged that at least a part of the replacer is adjacent the downwardly turned portion of its corresponding rail of the second pair, said replacer having a vertical web that tapers downwardly in the same direction as the downwardly turned end portion of the second pair of rails, each of said replacers having a portion thereof spaced apart from its corresponding rail of said second pair and so constructed and arranged as to define a guide way therewith for slidably receiving the flange of a rail wheel therebetween, a pair of parallel guide rails generally parallel to said replacers and located at the ends of the replacers opposite the second pair of rails, each of said guide rails having a vertical flange for guiding a rail wheel.

8. In a railway having a first pair of parallel rails supported on ties, a derailing and rerailing device comprising a second pair of parallel rails used for derailing and rerailing railway cars, each of said second pair of rails having one end switchably connected to one rail of said first pair whereby in one position a pair of wheels of a railway vehicle will switch from the first pair to the second pair of rails, each of the ends of the rails of the second pair being connected to different rails of the first pair, each rail of the second pair also having a downwardly turned portion on its opposite end extending below the level of said first pair of rails and down to substantially the same level as that of the ties, a pair of substantially parallel replacers located adjacent the pair of second rails whereby one pair straddles the other pair, each replacer located adjacent a different corresponding rail of the second pair and rigidly connected in a position generally parallel thereto, said replacer located so that at least a part of the replacer is adjacent the downwardly

turned portion of its corresponding rail of the second pair, each of said replacers having a portion thereof spaced apart from its corresponding rail of said second pair and so constructed and arranged as to define a guide way therewith for slidably receiving the flange of a rail wheel therebetween, a pair of parallel guide rails generally parallel to said replacers and located at the ends of the replacers opposite the second pair of rails, each of said guide rails having a vertical flange for guiding a rail wheel, said replacers being spaced apart a distance that

5

10

the same are in guiding engagement with each wheel of said pair of wheels.

References Cited in the file of this patent

UNITED STATES PATENTS

762,176	Lockwood	June 7, 1904
979,494	Howard	Dec. 27, 1910
1,125,677	Feltus	Jan. 19, 1915
1,465,963	Brown	Aug. 28, 1923