Jan. 3, 1928. 1,654,869

M. EICHELGRÜN

INCLINED PLANE SWITCH AND CURVED TRACK FRAME FOR FIELD RAILWAY VEHICLES

Filed Feb. 25 1927 2 Sheets-Sheet 1

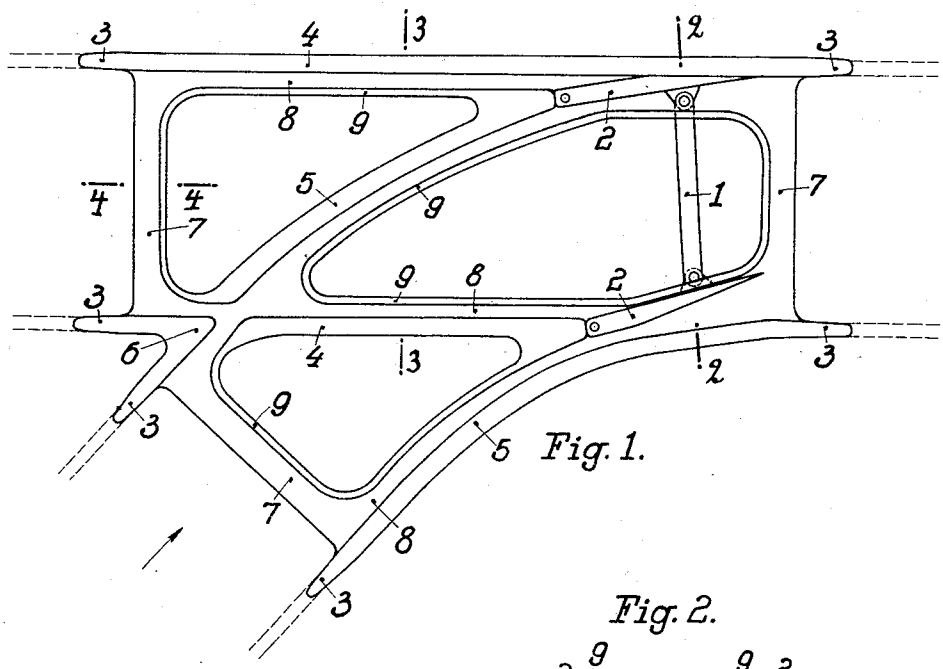


Fig. 1.

Fig. 2.

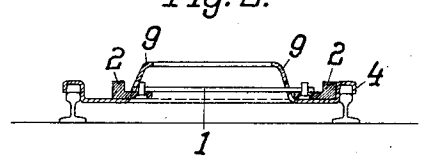
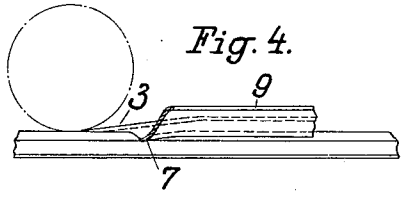


Fig. 4.



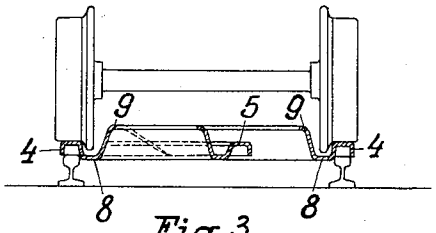
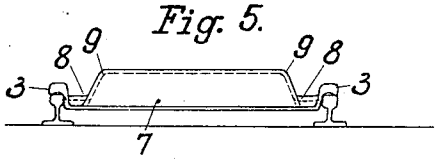


Fig. 3.

Fig. 5.



Inventor:

Martin Eichelgrün

by [illegible]

[illegible]

Jan. 3, 1928. 1,654,869

M. EICHELGRÜN.

INCLINED PLANE SWITCH AND CURVED TRACK FRAME FOR FIELD RAILWAY VEHICLES

Filed Feb. 25 1927 2 Sheets-Sheet 2

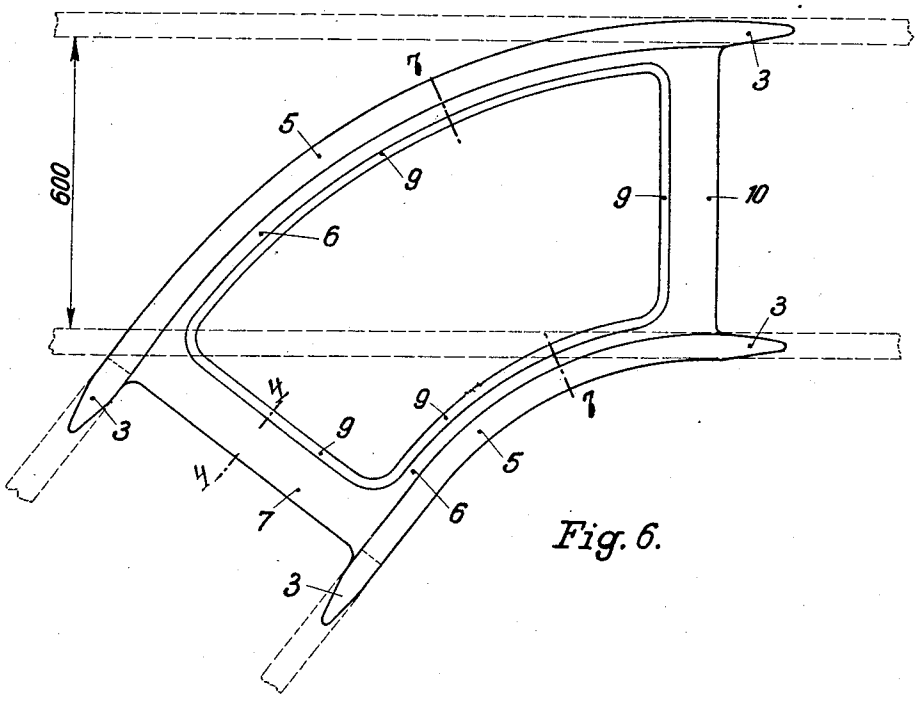


Fig. 6.

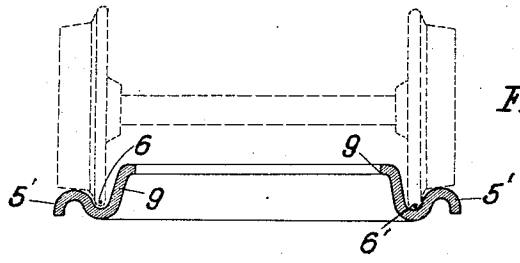


Fig. 7.

Inventor:

Markus Eichelgrün

by [illegible]

attorney

Patented Jan. 3, 1928. 1,654,869

UNITED STATES PATENT OFFICE.

MARTIN EICHELGRÜN, OF FRANKFORT-ON-THE-MAIN, GERMANY.

INCLINED-PLANE SWITCH AND CURVED-TRACK FRAME FOR FIELD RAILWAY VEHICLES.

Application filed February 25, 1927, Serial No. 171,010, and in Germany July 19, 1926.

The commonly used inclined plane switches for field-railway-vehicles are made from several pieces of rail connected the one with the other by riveted sheet iron plates and flat iron traverses. This form of construction presents the inconvenience that the car must overcome by means of a long movable ramp the height of the rails and of the sheet iron plates amounting at least to 60 to 70 mm. These running up tongues were fixed on the branched track by means of fish-plates and placed upon the straight continuous track when a car had to be conducted onto a parallel track.

It happened frequently that the ramps slipped when the car was running up the same, so that the car derailed and tipped over, this causing grave accidents. The rivet-connections got loose after a short time, so that, not to mention accidents, the switch became unfit for use. The inclined plane-switches of known type required several manipulations before a car could run over the same, as first each ramp had to be put on, whereupon the frog had to be turned over and wooden sleepers had further to be placed under the switch to prevent bending of the rails.

These inconveniences are avoided by the improved inclined plane switch according to the invention which will be hereinafter described. The switch is not composed of several pieces but pressed from one piece of sheet steel.

An embodiment of the invention is shown, by way of example, in the accompanying drawings in which:

Fig. 1 is a top plan view.

Fig. 2 is a section on line 2—2 of Fig. 1 through the ramp.

Fig. 3 is a section on line 3—3 of Fig. 1 through the running rails with grooves and strengthening ribs.

Fig. 4 is a section on line 4—4 of Fig. 1 through the traverses the ramp being shown in elevation.

Fig. 5 is an elevation of the traverse and ramp viewed in the direction of the arrow.

Fig. 6 shows in top plan view a curved track-frame.

Fig. 7 is a section on line 7—7 of Fig. 6.

A pair of ramps 2 connected by a cross-tie 1 are the only movable elements. The switch has a maximum height of 30 mm. The cars can be very easily pushed up on this switch as they have not to overcome a great height. The ramps 3 for climbing up may be short owing to the low height of the switch and they are made in one piece with the switch. Slipping off the tongues and derailing of the cars is absolutely excluded. Only one manipulation is necessary. By the cross-tie 1 the ramps 2 are adjusted in accordance with the direction of the track onto which the car has to be run, or they are operated by spring and pedal so that no operating by hand is necessary. The ramps 2 may be omitted in which case the cars at the running up have to be pressed slightly in the desired direction.

Field-railway-locomotives may be run over the improved switch owing to its stability and its secure position in the track. Whole trains can run through the switch without any danger of derailing, this being an advantage which no inclined plane switch of commonly used type can offer.

Notwithstanding its stability the switch is of such light weight that it can be easily transported. The inserting of wooden sleepers is no longer necessary owing to the strong and compact construction.

The switch proper consists of the two straight running rails 4 and the two curved running rails 5. To the frog 6 and the running rails 4 and 5 the running up ramps 3 are joined. The traverses 7 connect the running rails at those points at which they merge into the running up ramps and are inserted between the rail-heads as can be seen from Fig. 5. The grooves 8 in which the wheel-flanges run are also inserted between the rails so that the switch rests strongly and securely on the track. Between the grooves an upwardly projecting rib 9 is arranged which serves to give to the switch the necessary stiffness against bending.

A further improvement is shown in Figs. 6 and 7 which illustrate a simple pressed curved track-frame by means of which running off the track can be effected.

When a car has to run straight along the main-track, the track frame has to be removed from the main-track, this being easily done owing to the light weight of the track-frame.

The track-frame consists of two curved running rails 5 each of which is pressed, as shown in Fig. 7 in S-shaped cross section. The outer bead 5′ serves as support for the wheel flange, the adjacent groove

6′ serving to accommodate the tread of the wheel. The free arm of the groove 8′ is extended to form an upwardly projecting rib 9 which gives sufficient stiffness to the track-frame. The two running rails 5 are connected the one with the other by traverses 7 preferably pressed in one piece with the running rails 5.

The running rails 5 merge each at each end into a ramp 3, as shown in Fig. 6.

The track-frame is constructed in such a manner that it may be used according to requirement as left switch or as right switch. Fig. 6 shows the track-frame as left switch. When the frame is turned in its plane so that the traverse 7 rests upon the main track at the point at which in Fig. 6 the traverse 10 rests, the frame acts as right switch. The facility to use the track-frame as left switch as well as right switch is a considerable advantage.

I claim:—

1. An inclined plane switch and curved track frame for field railway cars pressed in one piece from sheet steel and comprising two curved running rails of approximately S-shaped cross section, an upwardly projecting strengthening rib forming the extension of and connecting the upper ends of the inner arm of the groove in each S-shaped running rail, two traverses connecting said curved running rails, and a ramp at each end of each running rail.

2. An inclined plane switch and curved track frame for field railway cars pressed in one piece from sheet steel and comprising two curved running rails of approximately S-shaped cross section, an upwardly projecting strengthening rib forming the extension of and connecting the upper ends of the inner arm of the groove in each S-shaped running rail, two traverses connecting said curved running rails, and a ramp at each end of each running rail, said frame being symmetrically constructed with regard to said traverses and said ramps so that by turning it in its plane it may be used either as right switch or as left switch.

In testimony whereof I affix my signature.

MARTIN EICHELGRÜN.