

[54] **GUIDE ELEMENT FOR PIVOTING RAILS**

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[22] Filed: **Jan. 13, 1972**

[21] Appl. No.: **217,554**

[52] U.S. Cl.**246/392**, 238/29, 246/342,
246/435, 246/468

[51] Int. Cl.**E01b 7/14**, E01b 9/00

[58] Field of Search.....238/1, 39, 29;
246/392, 451, 380, 435, 430, 264, 389, 331,
446, 333, 336, 339, 361, 340, 341, 379, 387

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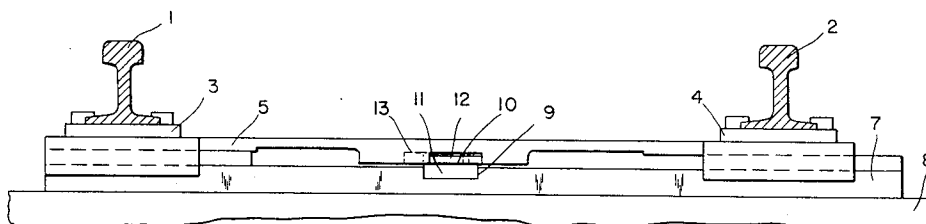
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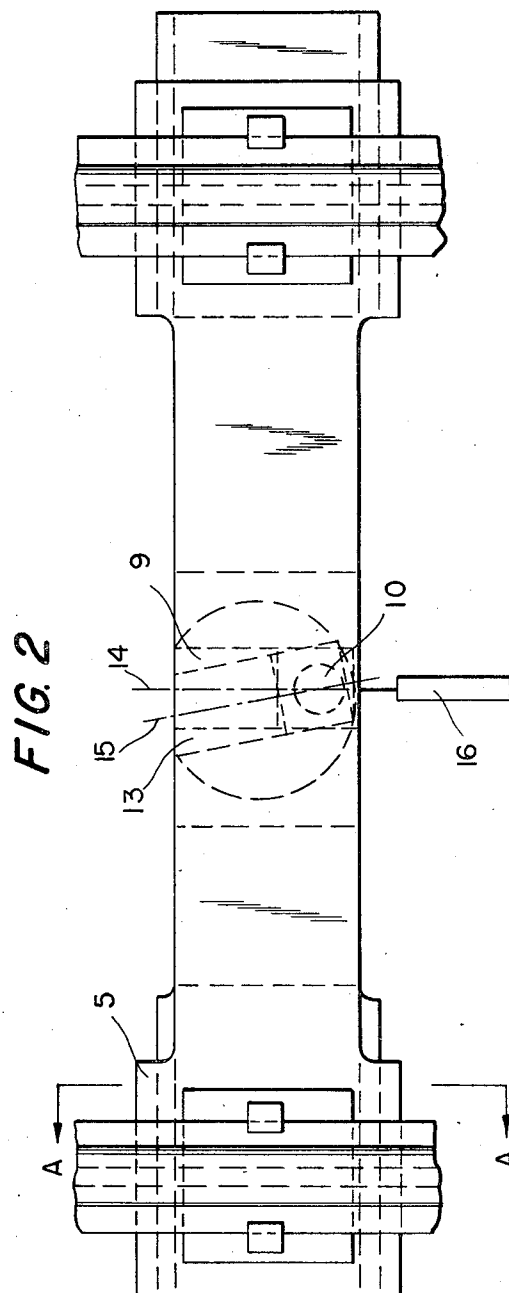
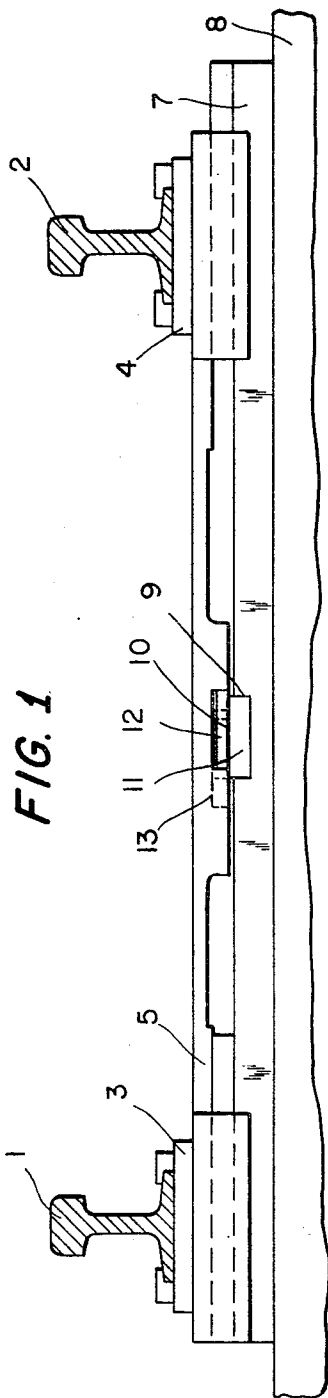
[57] **ABSTRACT**

There is disclosed a guide element for setting or adjusting operations and for maintaining the end position of pivotal rails, particularly in the frog and deflecting areas, in wide-curve switch points.

The pivotal rails rest, by means of one of the known elastic rail attachments, on a tie-like slide carriage which is displaceable transversely to the direction of the track and which, in turn, is held in position in the vertical direction by a bracket or supporting plate, being secured to a base plate, by means of a sliding guide, and guided in the horizontal direction. One displacing element consisting of two oppositely rotatable slide rings is so mounted between the bracket or supporting plate and the slide carriage that the lower slide ring slidably engages in the guide way or path of the bracket or supporting plate positioned parallel to the direction of the track. The upper slide ring slidably engages in the guide way or path of the slide carriage being positioned diagonally to the direction of the track and the lower slide ring is preferably connected with a pneumatically, or hydraulically, or electrically-actuated thrust setting element.

3 Claims, 3 Drawing Figures





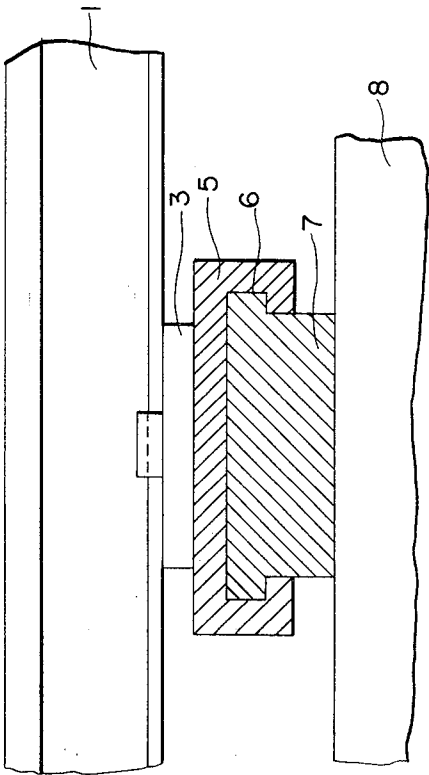


FIG. 3

GUIDE ELEMENT FOR PIVOTING RAILS

The present invention relates to a guide element for the setting or adjusting operation and for maintaining the end position of pivoting rails, particularly in the frog and deflecting areas, in wide-curved switch points intended for maximum speeds.

In constructions with pivotal rails for wide-curved switch points which are to be negotiated at very high speeds, a transverse displacement of the rails over a great length and the locking thereof in the respective end position are necessary in order to prevent vertical and horizontal movements as a result of the traffic loads. The extent of the transverse displacement is variable.

In order to meet these requirements, it is known in the art to utilize a large number of setting or regulating elements having a varying length of stroke and stop elements which must be locked and checked in the respective end positions thereof. The disadvantage of such a construction resides in that, due to the many elements and the susceptibility to disturbances resulting therefrom, the operational safety is diminished and the costs are high.

The present invention reduces the number of the setting or regulating and stop elements while nevertheless assuring an easy readjustment or repositioning of the pivotal rails in order to maintain the wheel track or gauge thereof constant and to lock the same in the respective end position thereof.

This result is obtained, in accordance with the present invention, by virtue of the fact that the pivotal rails rest, by means of one of the known elastic rail attachments, on a tie-like slide carriage which is displaceable transversely to the direction of the track and which, in turn, is held in position in the vertical direction by a bracket or supporting plate, being secured to the base plate, by means of a sliding guide, and guided in the horizontal direction. One displacing element consisting of two oppositely rotatable slide rings is so mounted between the bracket or supporting plate and the slide carriage that the lower slide ring slidably engages in the guide way or path of the bracket or supporting plate positioned parallel to the direction of the track. The upper slide ring slidably engages in the guide way or path of the slide carriage being positioned diagonally to the direction of the track, and the lower slide ring is preferably connected with a pneumatically, or hydraulically, or electrically-actuated thrust setting element.

In order that the guide ways or paths of the individual slide carriages can be adjusted for the precise lateral displacement corresponding to the respectively required deflecting ordinate, the guide ways or paths are displaceably and lockably mounted in the slide carriages.

In order to avoid jolt-gliding phenomena, and in order to reduce the driving forces, the sliding guides and/or the guide ways or paths of the displacing elements have friction-reducing gliding layers, preferably of perfluoroethylene, or longitudinal guide rolling elements.

The construction of the displacing system may be so modified that the guide ways or paths are constructed in a raised or elevated manner and the two slide rings are caused to glide at the outer surfaces thereof.

The advantages afforded by the present invention are that the adjusting or setting operation for pivotal rails

no longer takes place transversely to the direction of the track, but parallel to the direction of the track via the displacing elements with the aid of thrust setting elements. In this manner, it is possible that several displacing elements be moved by one drive so that the total number of the displacing elements for one switch point construction is reduced. Due to the change of the inclination of the guide way or path in the slide carriage, the regulating distance for the stroke setting elements may be kept approximately the same at a varying transverse movement of the slide carriage. Furthermore, the proposed sliding guide between the bracket or supporting plate and the slide carriage satisfies the requirement for the vertical positioning or level of the rails which heretofore was not necessary in switches since the speeds were considerably lower than those which must be accommodated by the switch points in question. Any stop or holding elements, which are susceptible to breakdown, are thus unnecessary in this construction. An expensive control of the gauge distance also becomes superfluous in this construction since the pivotal rails are firmly held in place on the slide carriage at a constant distance with the aid of elastic rail attachments.

One embodiment of the present invention is illustrated in the accompanying drawing, wherein

FIGS. 1 and 2 are a lateral view and, respectively, a top plan view of the guide system of the present invention, and

FIG. 3 is a cross-sectional view taken along line A—A through the sliding guide.

As shown in FIG. 1, the pivotal rails 1 and 2 are connected with the slide carriage 5 for example by means of one of the known elastic rail attachments 3 and 4. The slide carriage is provided with a sliding guide 6 shown, for example, in FIG. 3 which fittingly reaches or extends over the bracket or supporting plate 7. The latter is secured to a continuous base plate 8. It has a guide way or path 9 which is provided parallel to the direction of the track. Within the guide way or path 9 glides the lower slide ring 11 of the displacing element 10, while the upper slide ring 12 of the displacing element 10 regularly in the guide way or path 13 which is regulably and lockably connected with the slide carriage 5.

The extent of the sloping position of the guide way or path 13 determines the lateral transverse movement of the slide carriage 5. When the slide ring 11 is moved by the thrust setting element 16 parallel to the direction of the track, the upper slide ring 12 being rotatably connected with the lower slide ring 11 is displaced into the guide way or path 13 so that as a result the slide carriage 5 is displaced in the transverse direction. The extent of the transverse displacement depends upon the angular position of the upper and lower guide way axes 14 and 15.

FIG. 2 illustrates by way of example the displaceability of the guide way or path 13. When forces resulting from the traffic load act upon the pivotal rails 1 and 2, the rails will be held or maintained in the respective end positions thereof by the sliding guides 6 in the vertical direction, and by the displacing element 10 in the horizontal direction.

FIG. 3 is a cross-sectional view taken along line A—A. The pivotal rail 1 is held on the slide carriage 5 by means of the rail attachment 3. The slide carriage has, for example, a T-shaped sliding guide 6 which ex-

tends over the counter-piece or element at the bracket or supporting plate 7.

When the thrust setting element 16 is actuated, the slide carriage 5 is displaced relative to the bracket or supporting plate 7 at a right angle to the section line A—A.

In order to avoid jolt-gliding phenomena and also in order to reduce the driving forces, the limiting surfaces of the sliding guides 6 and/or the guide ways or paths 9 and 13 are provided with friction-reducing sliding layers, preferably of perfluoroethylene. It is further possible to provide for corresponding longitudinal guide rolling elements, or to employ gliding layers from specific materials which require little maintenance and have good dry operating properties.

It will be obvious to those skilled in the art that many modifications may be made within the scope of the present invention without departing from the spirit thereof, and the invention includes all such modifications.

What is claimed is:

1. A guide element for setting or adjusting operations and for maintaining the end position of pivotal rails, particularly in the frog and deflecting areas, in wide-

curve switch points, which comprises

base plate means,

supporting bracket means secured to said base plate means,

slide carriage means supporting said pivotal rails on said supporting bracket means, said slide carriage means being displaceable transversely to the track direction,

a rotatable upper slide ring means slidably engaged in a guide way in said slide carriage means, said guide way being diagonal to the track direction,

an oppositely rotatable lower slide ring means connected to said upper slide ring means and slidably engaged in a guide way in said supporting bracket means, said latter guide way being parallel to the track direction, and

means for displacing said slide rings.

2. A guide element according to claim 1 including locking means for said guide way in said slide carriage means.

3. A guide element according to claim 1 including friction-reducing perfluoroethylene layers on said sliding surfaces.

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