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ARTICULATED CAR CONSTRUCTION

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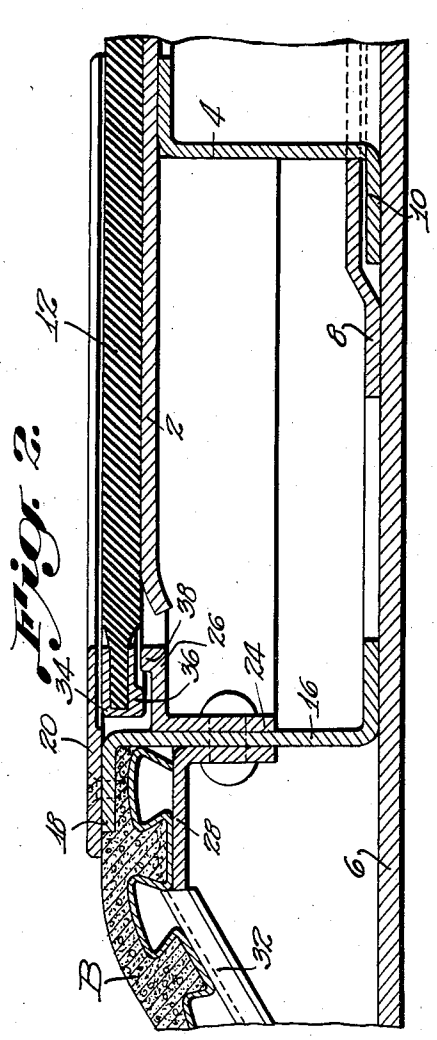


Fig. 2.

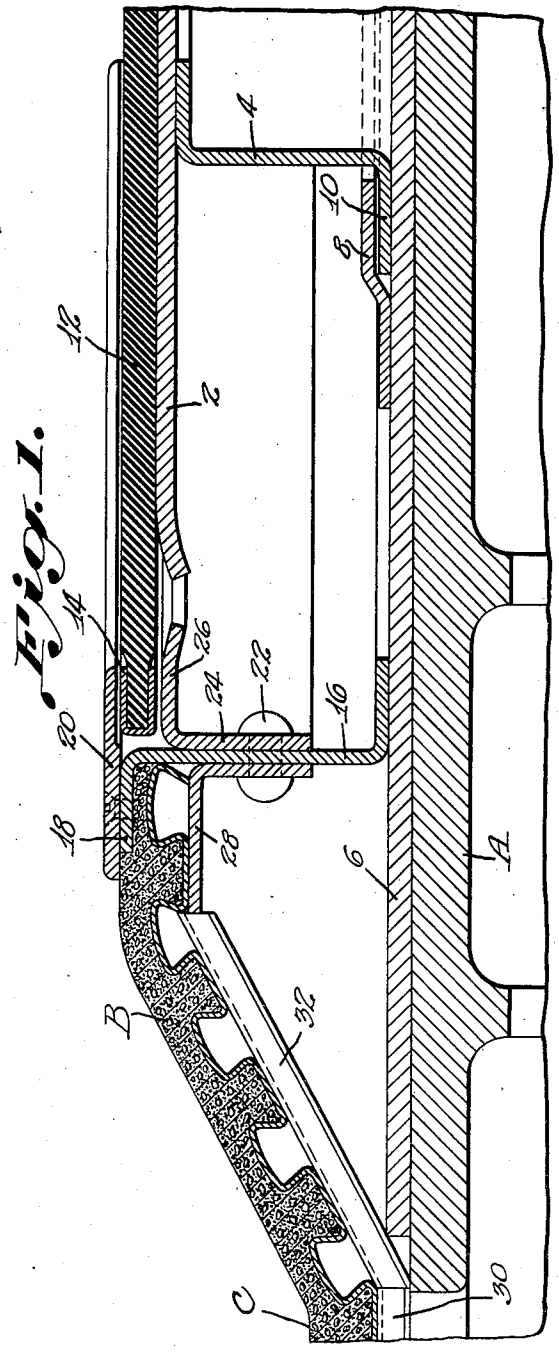


Fig. 1.

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ARTICULATED CAR CONSTRUCTION

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Original application May 9, 1934, Serial No. 724,650. Patent No. 2,036,254 dated April 7, 1936. Divided and this application March 6, 1936, Serial No. 67,443

10 Claims. (Cl. 105—4)

This invention relates generally to articulated cars and is directed in particular to a new and improved foot plate construction for bridging the space between adjacent car bodies of an articulated car, the present application being a division of pending application, Serial No. 724,650, filed May 9, 1934 and now Patent No. 2,036,254 issued April 7, 1936 to John Christiansen. The present invention is particularly adapted for use with an articulated car of the type in which the adjacent end portions of two car bodies are supported by what is known in the art as a single or pivot truck, as shown and described in the beforementioned patent, it is to be understood the invention may be used to advantage with articulated cars generally.

Heretofore foot plates have been of rigid construction and not entirely satisfactory due to the fact that in service there is necessarily a certain amount of relative shifting between the respective car bodies of an articulated car which made it impossible to obtain the desired close fitting association between the foot plate and tread castings or threshold plates on the end portions of the car bodies. In such an arrangement there is excessive relative movement and friction between these parts resulting in an unsteady and noisy foot plate construction.

It is an object of the present invention, therefore, to provide a foot plate construction for articulated cars which will permit a closer and more effective association between the foot plate and adjacent car parts and in which excessive friction and play between the foot plate and these parts is eliminated.

Another object of this invention is the provision of a foot plate construction in which a resilient foot plate element is supported between and associated with the adjacent end portions of two car bodies in such a manner that it is permitted to flex upon relative shifting of the car bodies.

A further object of this invention is the provision of a flexible foot plate for articulated cars which will permit the individual car bodies to shift relative to one another without interrupting or disturbing in any way the passage between adjacent car bodies.

A still further object of this invention is the provision of new and improved foot plate supporting means for maintaining the foot plate securely in place irrespective of variations in the relative positions of the car bodies.

Other objects and advantages of the invention will be apparent from a consideration of the following description and accompanying drawing in which:

Fig. 1 is an enlarged longitudinal sectional view through an end portion of a car body showing one form of resilient foot plate and supporting means therefor; and

Fig. 2 is a view similar to Fig. 1, illustrating another embodiment of the invention.

Referring now more particularly to the accompanying drawing, a body connection casting A is shown, the same being secured to each of the adjacent end portions of the car bodies and forming part of the body underframe; the castings being provided with means adapting each pair of adjacent car body end portions to be supported by a pivot truck.

Extending between adjacent car body end portions is a foot plate base member 2 secured to and supported by brackets 4, Z-shaped in cross-section; resting upon end top cover plates 6 secured to the body connection castings A. Clips 8 are secured to the cover plates and overlap the lower flanges 10 of the Z-shaped brackets to retain the brackets and foot plate against displacement. It will, of course, be understood that the foot plate construction is the same at each adjacent car body end portion and therefore the arrangement at one end portion only is shown and described.

Mounted on foot plate base member 2 is a foot plate 12 composed of resilient material such as rubber compound or the like, said foot plate being substantially circular in form and having its marginal edge portion protected and reinforced by a channel ring 14 (see Fig. 1). Secured to each top cover plate 6 and at the end portion of each car body is a tread support 16 in the form of a curved breast Z to the upper flanges 18 of which is secured a tread plate 20 which, as clearly shown in Fig. 1, overlaps the resilient foot plate element 12 at the reinforced marginal edge portion thereof. The tread support 16 has secured thereto by the rivets 22, or other suitable fasteners, a supporting element 24 having its upper edge portion flanged at 26 to underlie and support the reinforced marginal edge portion of the resilient foot plate element. With this arrangement it will be seen that the marginal edge portion of the resilient foot plate element is retained between the overlapping portion of the tread plate 20 and the underlying flange 26. Secured to the opposite side of the tread support 16 by the aforementioned rivets 22 is a floor supporting angle 28 which supports an upwardly extending portion B of the car floor C. The car floor C may be of any

desired or preferred form and the upwardly inclined portion B thereof is in contacting relation with the tread support 16 and rises to the plane of the resilient foot plate element 12 with its end portion underlying the tread plate 20 and flange 18 of the tread support 16. In the instance shown the car floor C comprises pressed sections of the well known chanarch type covered with a tread surface of composition material and is supported by a plurality of foundation elements, one of which is indicated at 30, substantially Z-shaped in section. The chanarch metal is continued upwardly at an incline to the floor supporting angle 28 and is supported by a plurality of similar foundation elements 32 which extend from the foundation elements 30 to the angle 28.

Referring now to Fig. 2 which illustrates another embodiment of the invention, the resilient foot plate element 12 is provided with a reinforced marginal edge portion 34 comprising a channel having an annular rib 36 depending therefrom and so arranged as to cooperate with an upstanding abutment 38 formed on the flange 26 of the supporting element 24. The form of resilient foot plate construction shown in Fig. 2 is in all other respects the same as that disclosed in Fig. 1.

It is believed the advantages of the foot plate arrangement just described will be readily apparent to those skilled in the art. The construction provided possesses the required flexibility to adapt itself to the variations in the relative positions of the car bodies, insuring a steady and undisturbed passageway between adjacent car bodies.

It is to be understood the invention is not limited to the specific details of construction as shown and described, as various modifications may be made within the scope of the claims hereinafter presented.

What is claimed is:

1. In articulated car construction, means for bridging the space between adjacent end portions of adjacent bodies of an articulated car comprising a resilient foot plate element, a metal plate on which said element is supported, said metal plate being of smaller diameter than said resilient element, means on the adjacent end portions of the car bodies for supporting said metal plate adjacent the central zone thereof, a car floor extending upwardly to approximately the same plane as the resilient foot plate element, and a threshold plate on each car body overlapping the marginal edge portion of said resilient element.

2. In articulated car construction, means for bridging the space between the adjacent end portions of adjacent car bodies comprising a metal plate extending between and supported by adjacent end portions of the car bodies, a resilient element mounted on the metal plate and projecting beyond the marginal edge portion of the latter, and means spaced from the metal plate so formed as to constitute guide means for oppositely arranged portions of the resilient element and into which said portions extend.

3. In articulated car construction, means for bridging the space between the adjacent end portions of adjacent car bodies comprising a metal plate extending between and supported by adjacent end portions of the car bodies, a resilient element mounted on the metal plate and having its marginal edge portion projecting beyond the marginal edge portion of said plate, and guide means on the car bodies into which oppositely arranged portions of the projecting portion of the resilient element extend whereby the resilient element is permitted to flex upon variations in the relative positions of the car bodies.

4. In articulated car construction, means for bridging the space between the adjacent end portions of adjacent car bodies comprising a metal plate extending between and supported by adjacent end portions of the car bodies, a resilient element of greater diameter than said metal plate mounted thereon, said resilient element having a reinforced marginal edge portion formed with a depending annular rib, and means on the car bodies in supporting engagement with said marginal edge portion and so formed and arranged as to cooperate with said annular rib to retain the resilient element against displacement.

5. A foot plate construction for articulated cars comprising a metal plate extending between and supported by the adjacent end portions of adjacent car bodies, a resilient element mounted on said plate and having oppositely arranged portions thereof overlapping the marginal edge portion of said plate, a car floor having a portion extending upwardly to approximately the same plane as the resilient element, and combined means on the car bodies for supporting said upwardly extending floor portion and oppositely arranged overlapping portions of the resilient element.

6. In a foot plate construction for articulated cars, a metal plate extending between and supported by the adjacent end portions of adjacent car bodies, a resilient element mounted on the metal plate and projecting beyond the marginal edge portion thereof, and means on the car bodies embracing oppositely arranged portions of the resilient element so formed and arranged as to permit the latter to flex upon relative shifting of the car bodies.

7. In articulated car construction, means for bridging the space between the adjacent end portions of adjacent car bodies comprising a resilient element, means extending between and supported by adjacent end portions of the car bodies and supporting said element at approximately its central zone, and guide means spaced from said supporting means and embracing opposite marginal edge portions of the resilient element whereby the latter is permitted to flex upon variations in the relative positions of the car bodies, at least certain parts of said guide means being secured to said car bodies.

8. In an articulated car, a foot plate construction for bridging the space between the adjacent end portions of adjacent car bodies comprising a resilient element, means extending between and supported by adjacent end portions of the car bodies for supporting said element adjacent its central zone, guide means on the car bodies into which opposite portions of the marginal edge portion of the resilient element extend, said guide means being formed with an abutment, and an annular rib depending from the marginal edge portion of said element and cooperable with the abutment to retain the resilient element against displacement.

9. In articulated car construction, means for bridging the space between the adjacent end portions of adjacent car bodies comprising a resilient foot plate element, a metal plate arranged between and supported by the car bodies and supporting said resilient element adjacent the central zone thereof, means on each car body including a flange underlying and supporting said resilient element at opposite marginal edge portions thereof, and a threshold plate on each car body over-

lapping the marginal edge portion of said resilient element.

10. In a foot plate construction for articulated cars, a rigid element, a resilient element of greater diameter than said rigid element and mounted thereon, said rigid element extending between and being supported by the adjacent end portions of adjacent car bodies, means on said car bodies including a flange underlying and supporting the marginal edge portion of said resilient element, said flange being provided with an abutment, and means on said marginal edge portion of the resilient element so formed and arranged as to cooperate with said abutment to retain the resilient element against displacement.

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