

Sept. 18, 1934.

E. L. GROFF
FOY TRAIN

1,974,330

Filed March 30, 1934

2 Sheets-Sheet 1

Fig. 1.

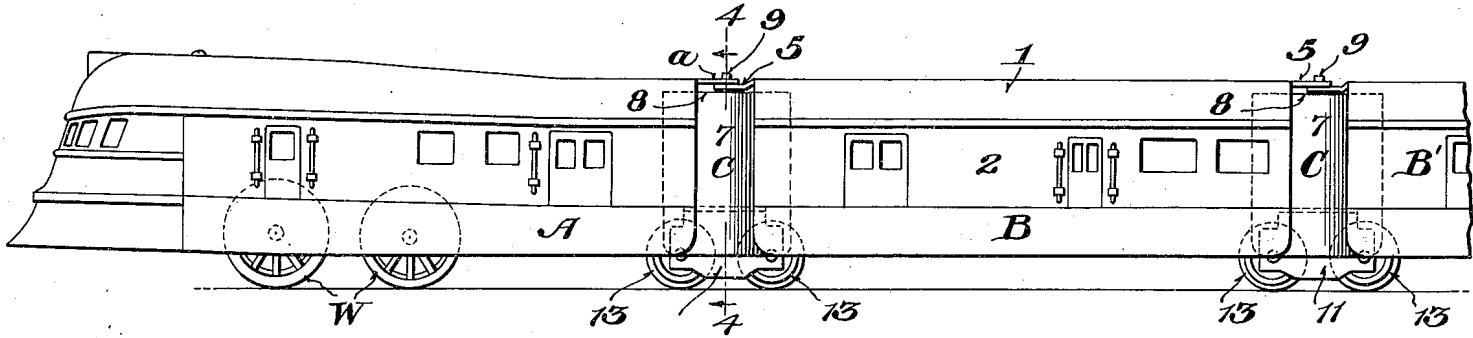
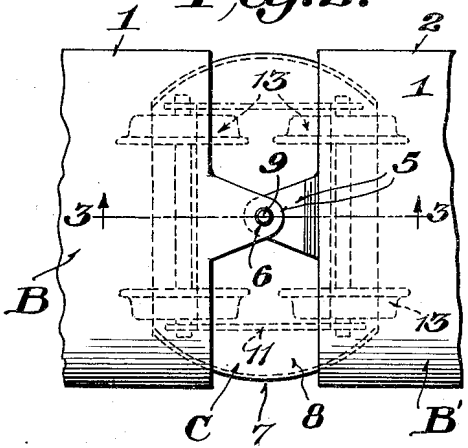


Fig. 2.



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Fig. 3.

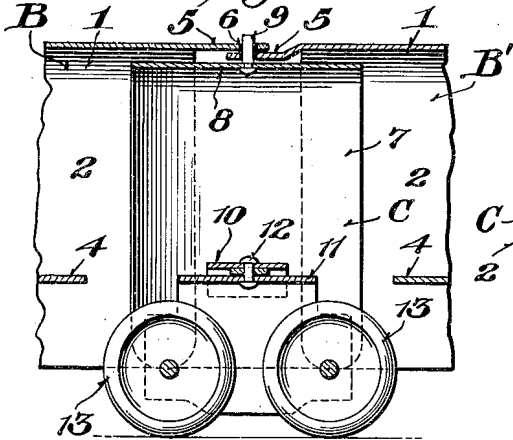
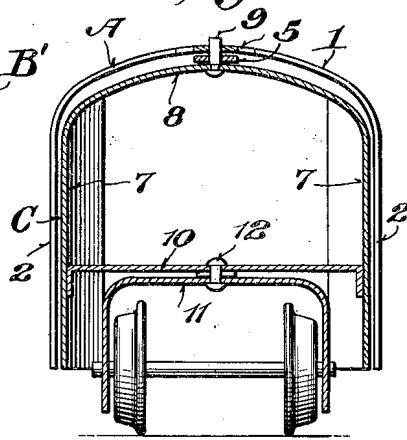


Fig. 4.



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Fig. 5.

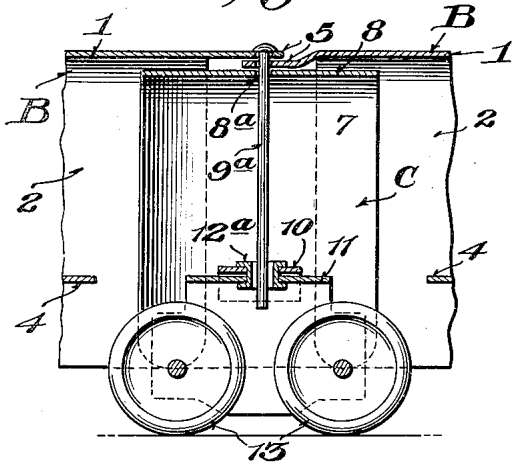


Fig. 6.

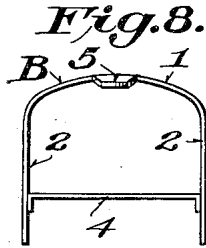
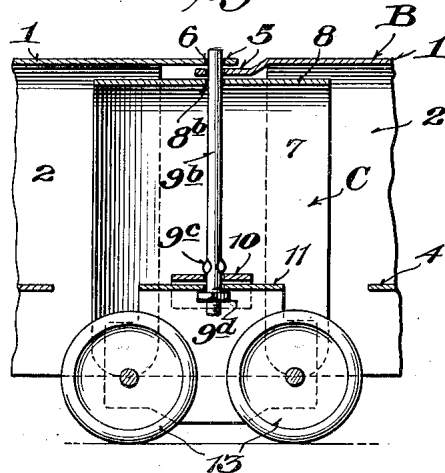


Fig. 7.

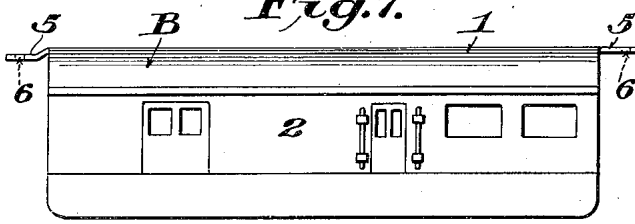


Fig. 9.

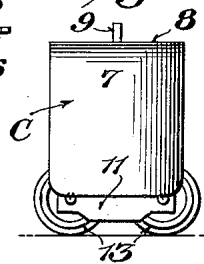


Fig. 10.

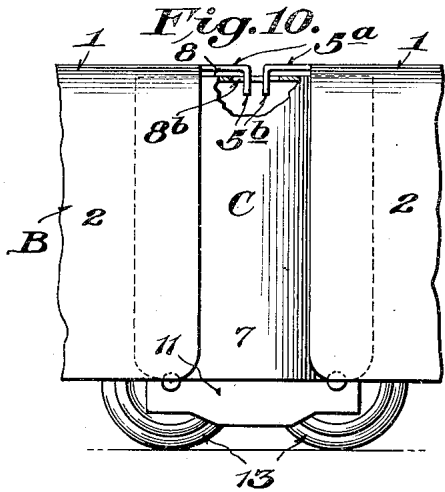
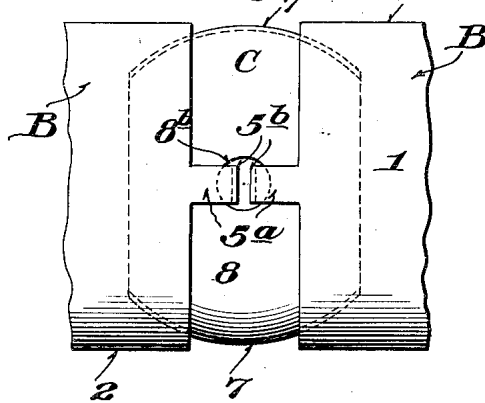


Fig. 11.



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UNITED STATES PATENT OFFICE

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TOY TRAIN

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Application March 30, 1934, Serial No. 718,286

18 Claims. (Cl. 46—48)

This invention relates to toy trains, either mechanical or electrical, and more particularly to novel features of construction which provide an articulated train simulating standard high speed trains of streamline type.

A primary object of the invention is to provide a train including a unit, simulating a train vehicle, and having a single vestibule section at one end thereof adapted to cooperate with the body of an adjacent unit to close the joint or gap between the bodies and permit of relative angular movement therebetween, so that the various units of the train may readily follow track curves. In that connection, the vestibule section may also function as a coupling between the bodies of adjacent units.

Another object of the invention is to provide a wheeled vestibule section which performs three functions, namely, coupling bodies of adjacent cars together, closing the gap therebetween, and supporting the bodies of the train vehicle units in train formation.

A further object of the invention is to provide vehicle simulating bodies which may be readily interchanged with the wheeled vestibule sections to readily form trains of various make-ups.

A still further object of the invention is to provide train units such as vestibule sections and car bodies which may be readily manufactured in a simple and expeditious manner and likewise assembled, and which on the whole effects considerable economy in many respects including that of providing a minimum number of wheeled trucks to form the complete train.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 is a detail side elevation of a portion of a complete train.

Figure 2 is a detail top plan view of one of the vestibule units illustrating its relation to the ends of adjacent car bodies.

Figure 3 is a vertical sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 1.

Figures 5 and 6 are vertical longitudinal sec-

tional views similar to Figure 3 illustrating modifications in the coupling pin element for connecting the car bodies with the vestibule section.

Figure 7 is a detail side elevation of a car body provided in accordance with the present invention.

Figure 8 is an end elevation.

Figure 9 is a detail side elevation of a wheeled vestibule unit.

Figure 10 is a detail sectional view illustrating a further modification of the means for coupling adjacent car bodies to the vestibule section.

Figure 11 is a detail plan view of the construction shown in Figure 10.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

In carrying the present invention into effect, it is proposed to provide a train consisting of a plurality of units A, B, B' etc., each simulating a train vehicle of the selected type and connected by the single vestibule section designated generally as C. As shown, the unit A may be a locomotive of either the electrical motor or spring motor type and provided with the traction wheels W. The front end of the locomotive may be formed to simulate a cab or pilot section while the opposite end is open to receive a portion of the vestibule section C. It will, of course, be understood that even the pilot end of the locomotive A may be equipped with a single vestibule section so that if desired, one end of the locomotive body may be open while the other end may be provided with a single vestibule section in the same manner as indicated in connection with the type of car shown in Figure 12. One end of the locomotive may be provided with a coupling extension *a* which will perform the same function as the coupling extension of the other car bodies presently to be described.

The car bodies B, B', etc. are preferably of hollow formation and have the external appearance of any selected type of train vehicle such as passenger coaches, Pullmans, baggage cars, freight cars and the like and also preferably have streamline characteristics corresponding to the general streamline effect of the entire train. The car bodies B, B' etc. may, according to the form of the invention shown in Figures 1 to 11 inclusive, be formed without wheels or wheeled trucks, and depend for their support on the wheeled vestibule sections C. Each of the car bodies preferably include a top or roof 1, sides 2—2, and may also include a bottom wall 4 (Figure 8), if desired, to strengthen and stiffen the

bodies, although in some forms of the invention it will be apparent that this bottom wall is not essential. Each of the bodies are provided at the opposite ends of their tops or roof portions with the coupling extensions 5—5 formed with a perforation or opening 6. These coupling extensions may be formed in the same plane as the roof or top 1, or the coupling extensions at one end of the car may be deflected to one side of the plane of the roof to facilitate coupling of the car bodies end for end when the single vestibule section C carries a common pivot pin.

Referring further to the single vestibule section C, it will be observed that in Figures 1 to 11 inclusive, this section is preferably of substantially circular or annular form and in any event, conforms to the general cross-sectional shape of the car bodies so as to effectively close the gap or joint therebetween when the units are assembled in train formation. Accordingly, the vestibule section comprises a side wall 7 and a top wall 8. The side wall may be continuous from top to bottom or it may be interrupted to provide in effect side wall sections or wings located at opposite sides of the car body, depending upon the type of construction used. The top wall 8 has a pivot element 9 which may be in the form of a stud or its equivalent as shown in Figures 1 to 4 inclusive to receive the registering opening 6 of the coupling extensions 5—5. The vestibule section C may also be provided with an interior support 10 to which the truck 11 may be attached. The said truck may be connected with the support 10 by means of the fastening 12. This fastening may either loosely connect the truck with the support, or rigidly secure the same thereto as desired. The truck 11 may be provided with one or more wheels 13 to support the vestibule section, and since the tops or roof portions of the car bodies are supported by the top 8 of the vestibule section, it will be apparent that an entire train may be readily and quickly made up by simply connecting the various types of car bodies with the upper portion of the vestibule section. When the several units of the train are thus connected, it will be apparent that the various car bodies may assume linear as well as angular relationship, but in all positions thereof, the joint or space between the bodies is masked or covered by the vestibule section C.

Figure 5 of the drawings illustrates a removable coupling pin 9^a. In this form of the invention, the perforated coupling extensions 5—5 of adjacent car bodies, are intended to register with an opening 8^a in the top wall 8 of the vestibule section and these openings in turn are intended to register with the opening in an eyelet 12^a for connecting the truck 11 with the support 10. It will thus be apparent that the coupling pin 9^a which may be provided with a head may be readily inserted in the aligned openings of the coupling extension and the vestibule section, and also that the truck 11 may be loosely connected with the vestibule section.

Figure 6 illustrates a permanent type of coupling pin carried by the vestibule section. In this arrangement, the support 10 and truck 11 are provided with registering openings intended to receive the shank of the coupling pin 9^b which may be provided with the offset portions 9^c or their equivalent, while the lower end may be threaded to receive a nut 9^d. In this way the lower end of the coupling pin may serve to connect the support 10 and truck 11, while at the same time, the upper portion of the coupling pin

extends through the opening 8^b in the top of the vestibule section, thereby to receive the perforated coupling extension 5—5 of the car bodies.

From Figures 7, 8 and 9, the construction of the car bodies may be readily observed as well as their relationship to the wheeled vestibule section C.

Figure 10 illustrates a modified form of coupling means between the car bodies and the vestibule section. From this figure, it will be observed that the coupling extensions 5^a are provided with the downturned portions 5^x at their inner ends, said portions 5^x being intended to engage within an opening 8^b in the top wall 8 of the vestibule section C. In this way, both of the coupling extensions 5^a may be formed in the same plane as the top of the body 1.

As previously indicated, the general cross-sectional shape of the vestibule section C is annular or circular. However, it will, of course, be understood that this term is intended to be relative in the sense that the portions of the vestibule section intended to be disposed within the car body need not necessarily continue in the arc of a complete circle, but may have a different arc, or may even be flat. In every case, however, the portion of the arc of the circle exposed at the joint between the trains is sufficient at all times to close the gap between the sides of the car bodies in all relative angular positions thereof.

From the foregoing, it will be apparent that the present invention is primarily concerned with the provision of a single vestibule section which not only provides for masking the joint between the ends of adjacent car bodies, but also pivotally connects the car bodies, and this is true whether the vestibule section is provided with a truck or not. Moreover, it will be understood that the general cross-sectional shape of the vestibule unit is intended to be substantially annular or circular although any variation from true circular formation, such as a wide oval, must also be regarded as within the scope of the invention to permit of the proper latitude in adapting the invention to vehicle bodies of different width when used in connection with trains of different gauge.

When the single vestibule unit C is wheeled, it will, of course, be apparent that the vehicle bodies are supported and carried thereby and both ends of the body will constitute in effect a portion of the female coupling means for the various units while the vestibule section constitutes a portion of the male coupling means.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood, that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:—

1. A toy articulated train including a plurality of vestibule simulating elements each provided with a wheeled truck and members simulating vehicle bodies connected to and supported by said vestibule elements for relative angular movement thereabout.

2. A toy train including a plurality of members simulating train vehicle bodies having the roof portions thereof interconnected for relative angular movement, and a plurality of wheeled elements arranged between said bodies and supporting the roof portions thereof at their points of connection.

3. A toy vehicle including a body having top and side walls, and a one-piece member having top and side walls fitting within the top and side walls of the body, said member being mounted on a wheeled truck and also being detachably interlocked with the vehicle body. 80
4. A toy vehicle including a body having top and side walls, a perforated extension on the top wall, and a substantially cylindrical element having top and side walls fitting within the top and side walls of the body, said element including a projection for receiving the perforated extension of the top wall, and a wheeled truck for said cylindrical element. 85
5. A toy articulated train comprising a plurality of members simulating train vehicles, and wheeled means for connecting and supporting the roof portions of said members and closing the space between said members when assembled in train formation. 90
6. In a toy train, the combination with a pair of vehicle bodies, of an intermediate vestibule section, and a pivot pin for detachably connecting said bodies with the vestibule section. 95
7. In a toy train, the combination with a pair of vehicle bodies, of an intermediate vestibule section, and a pivot pin for detachably connecting said bodies with the vestibule section, said pin constituting the axis of articulation between the vehicle bodies. 100
8. A toy train including a plurality of members simulating train vehicle bodies having integral roof extensions, and means arranged between said vehicle bodies for supporting and connecting said roof extensions to permit relative angular movement of the vehicle bodies when in train formation. 105
9. A toy train including a plurality of members simulating train vehicle bodies having integral roof extensions, and a substantially cylindrical vestibule simulating section having means at the upper end thereof for interconnecting said integral roof extensions. 110
10. A toy articulated train including a plurality of vestibule simulating elements each provided with a wheeled truck, and means simulating vehicle bodies supported solely by and pivotally connected to said vestibule simulating means. 115
11. A toy vehicle including a body, and a wheeled vestibule simulating section at each end of the body, said vestibule simulating section having the upper end thereof in supporting engagement with the body. 120
12. A toy vehicle including a body having a roof extension at each end thereof, and wheeled vestibule sections adapted for detachable engagement with the said roof extensions, said vestibule sections having means at the upper end thereof for pivotally supporting and carrying the said body at the roof extensions. 125
13. A toy train, including in combination, a pair of vehicle bodies, coupling extensions at the ends of the tops of said bodies, a single intermediate vestibule simulating section for closing the space between said vehicle bodies, and means at the upper end of said vestibule simulating section for engaging said coupling extensions to connect adjacent bodies together. 130
14. A toy train including a plurality of members simulating train vehicle bodies open at the ends and having the roof portions thereof interconnected for relative angular movement to maintain said bodies in train formation, and vestibule simulating means mounted between said bodies and extending into the open ends of adjacent bodies, said vestibule simulating means being located beneath and supporting the interconnected roof portions of adjacent bodies. 135
15. A toy train including a plurality of vestibule simulating elements, each supported on a wheeled truck, and members simulating train vehicle bodies having open ends for receiving a portion of a vestibule simulating element common to adjacent members, and said members being connected by said vestibule simulating elements to maintain said vestibule simulating elements and members in articulated train formation. 140
16. An articulated toy train including a plurality of vestibule simulating elements each provided with a wheeled truck, members simulating vehicle bodies open at the ends to receive a portion of the vestibule simulating element thereby to close the gap between the bodies in all positions thereof when in train formation, and means associated with the vestibule simulating elements to connect said bodies together in train formation. 145
17. A toy train including a plurality of vestibule simulating elements each including a side wall and a top wall and mounted on a wheeled truck, car bodies having transversely arched open ends adapted to receive a portion of the side and top walls of the vestibule simulating section to span the gap between adjacent car bodies, and means for connecting the car bodies with one of the walls of the vestibule simulating section to couple the bodies in train formation. 150
18. A toy train including a plurality of members simulating train vehicle bodies open at their adjacent ends, a single vestibule simulating section having a mounting between the open ends of said bodies and adapted to interfit with and project into the said open ends of the vehicle bodies to mask the joint therebetween and means associated with said vestibule simulating sections for connecting the vehicle bodies together. 155

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