Sept. 18, 1934. E. D. BOISSELIER 1,974,326

TOY TRAIN

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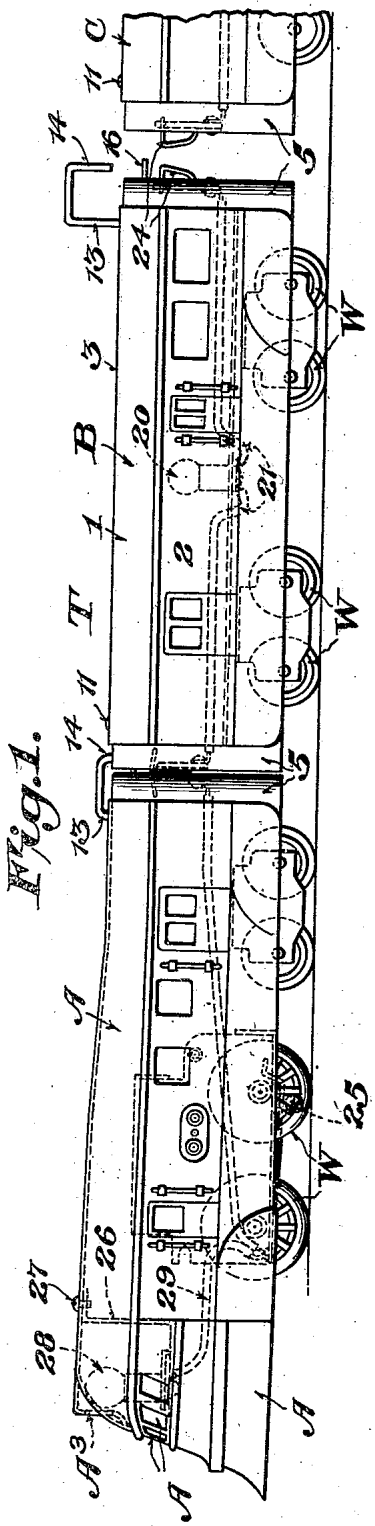

Fig. 1.

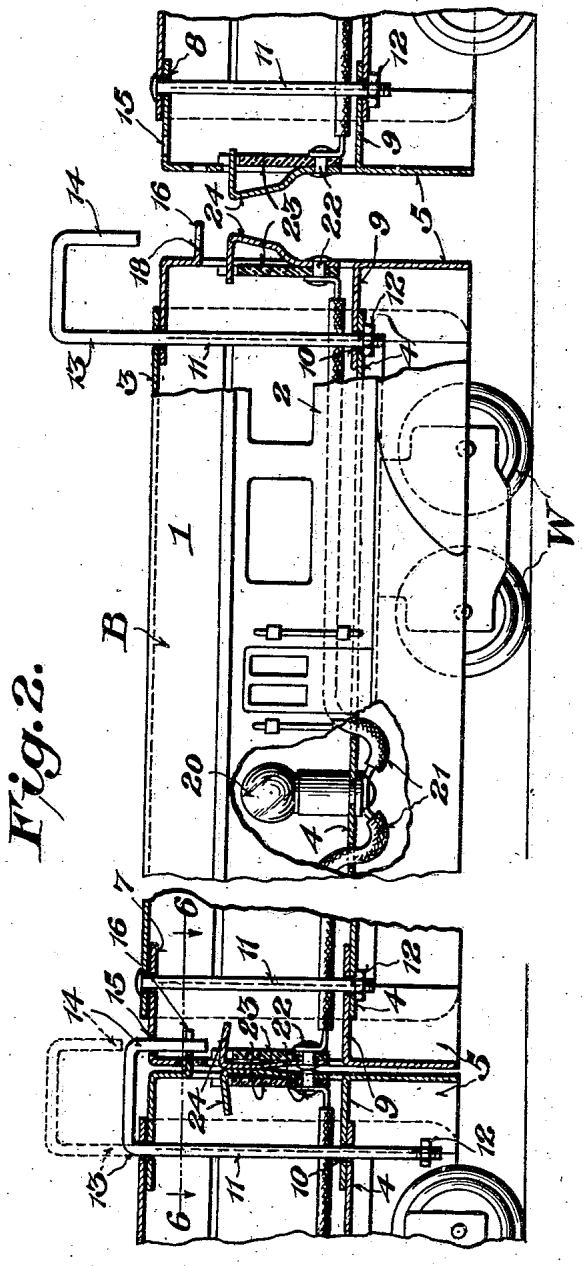

Fig. 2.

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TOY TRAIN

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Fig. 3.

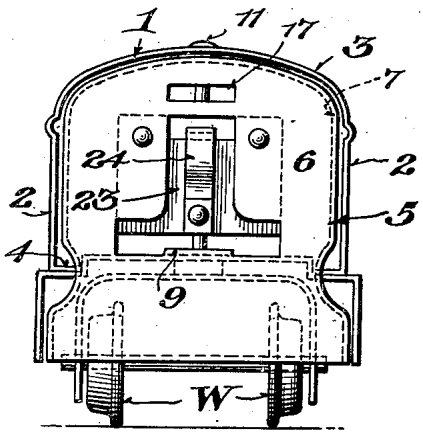


Fig. 4.

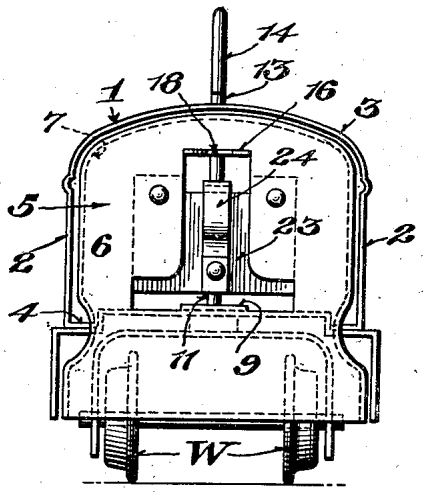


Fig. 5.

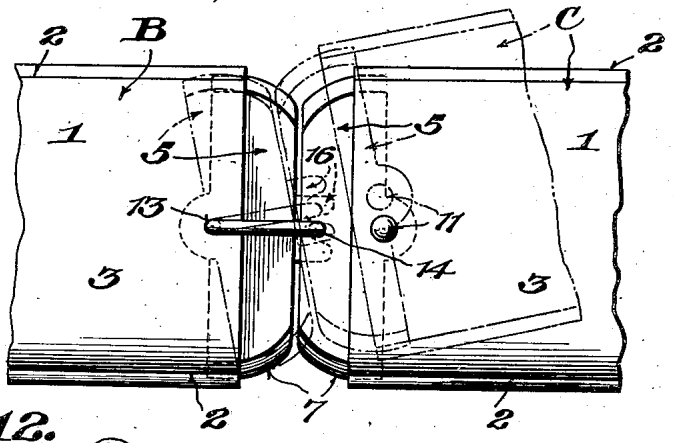
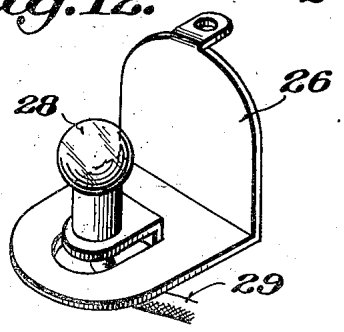


Fig. 12.



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TOY TRAIN

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Fig. 6.

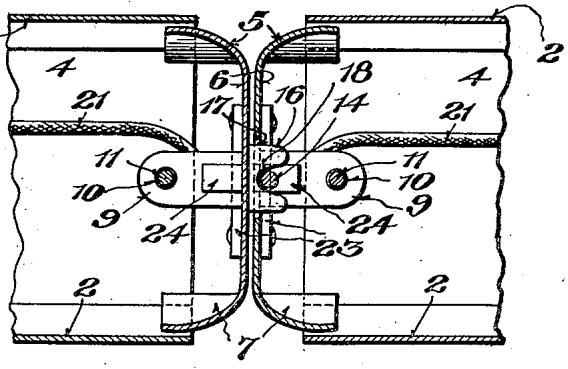


Fig. 7.

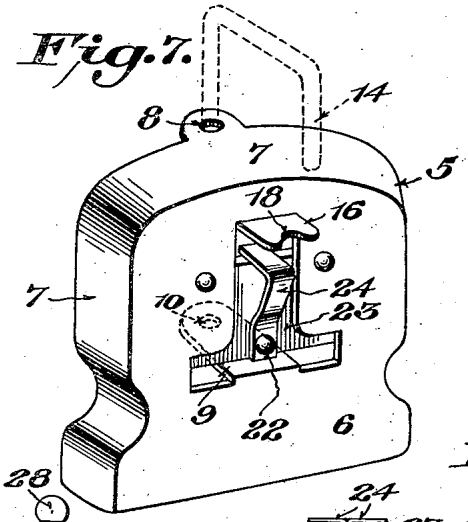


Fig. 8.

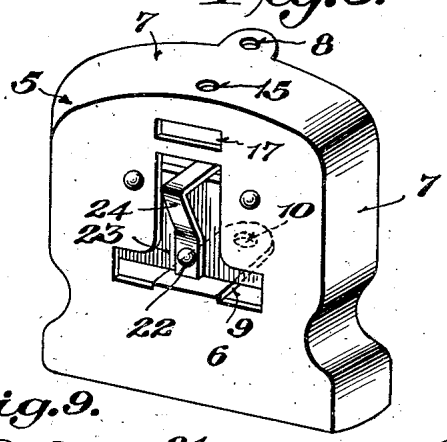


Fig. 9.

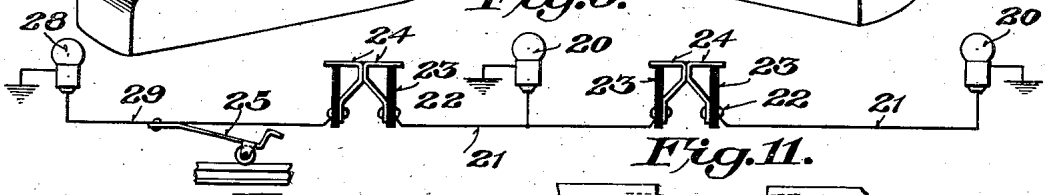


Fig. 10.

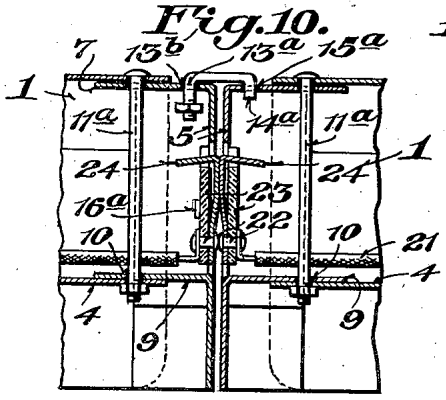
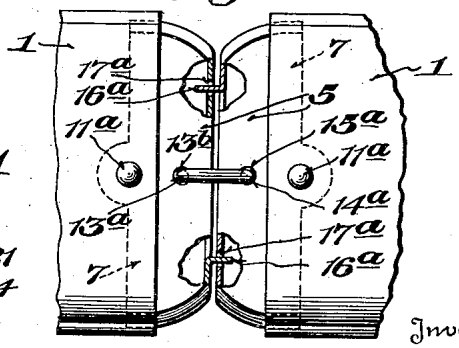


Fig. 11.



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Patented Sept. 18, 1934 1,974,326

UNITED STATES PATENT OFFICE

1,974,326

TOY TRAIN

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Application March 28, 1934, Serial No. 717,910

24 Claims. (Cl. 46—48)

This invention relates to toy trains, and more particularly to a toy train including a plurality of wheeled units having streamline bodies articulated for relative angular movement.

A primary object of the invention is to provide novel means whereby the several units of the train, such as the various types of cars and the locomotive, may be so connected that space between them is substantially eliminated, thus providing in effect a solid or full train unit articulated in such a manner that it will have the general appearance of external continuity, thereby simulating high-speed streamline trains of the type particularly constructed to have less wind resistance than trains of the more antiquated and heretofore conventional type.

A further object of the invention is to provide a train unit having a movable end wall or section simulating a vestibule which is so mounted on the unit that it may adjust itself with reference to the body thereof and also cooperate with and adjust itself to the vestibule of an adjacent unit regardless of the relative angular disposition of the juxtaposed vehicle bodies. Moreover, in that connection, it is the purpose of the invention to provide means for connecting the movable vestibule element of one unit with another, so as to maintain the units in proper train make-up.

Another object of the invention is to locate the means for connecting or coupling and uncoupling the movable vestibule sections at the upper side of the unit, thereby making it unnecessary for the operator to remove the train unit from the rails or otherwise manipulate it to couple or uncouple the cars. In addition to the coupling means, the invention also contemplates means for aligning the vestibule sections in such a way as to prevent relative lateral shifting of the same in the coupling operation and thereby also making it possible for the movable vestibule sections to be coupled on curves.

In addition to the foregoing objects, the invention also contemplates an illuminating system for the entire train unit which is simple, practical and reliable and which serves to automatically illuminate all the cars by the mere act of coupling the same together. A further feature of illumination resides in providing special means for lighting the cab of the locomotive and the head light, thereby to render the locomotive more realistic.

With the above and other objects in view which will become more fully apparent as the nature of the invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

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

Figure 1 is a side elevation of the improved train showing several of the train units.

Figure 2 is an enlarged detail view, partly in section, illustrating the movable vestibule sections and the manner of coupling or connecting the same, as well as the illuminating means for the various units.

Figure 3 is an end elevation of the vestibule unit at one end of the car.

Figure 4 is an end elevation of the vestibule unit at the opposite end of the car, and which with respect to the type of vestibule unit shown in Figure 3, when carried by an adjacent car, constitutes a mating section.

Figure 5 is a detail top plan view showing the vestibule sections connected with the position thereof shown in dotted lines when the car bodies assume different angular relation.

Figure 6 is a detail sectional view taken on the line 6—6 of Figure 2.

Figure 7 is a detail perspective view of the male vestibule unit.

Figure 8 is a detail perspective view of the female vestibule unit.

Figure 9 is a diagram of the illuminating means.

Figure 10 is a detail vertical sectional view of a modification.

Figure 11 is a detail top plan view, partly in section, of the modification shown in Figure 10.

Figure 12 is a detail perspective view of the unit for illuminating the cab of the locomotive.

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

As previously indicated, in carrying the invention into effect, it is proposed to provide a toy train consisting of a plurality of wheeled units so connected as to simulate a standard streamline train which presents a substantially continuous or unbroken exterior surface from one end to the other, while at the same time permitting the various units to be connected for selective assembly, and also readily assume various angular positions to easily follow the curves or turns in toy track. Ordinarily, toy track curves are much sharper than in actual practice, and this factor

has been taken into consideration in embodying the present invention in practical form.

Referring to Figure 1, it will be observed that the entire train is designated generally as T and preferably includes in its make-up a plurality of wheeled units A, B, C, etc. These units are intended to be placed on a toy track of the conventional three rail type, and one of the units, for example, A, may be a locomotive provided with a suitable propelling motor, while the remaining units may simulate passenger coaches, Pullman cars, baggage cars, and the like. In that connection, however, it will, of course, be understood that the invention is not limited to electrical trains, but the features of construction thereof may be readily incorporated in the so-called wind-up or mechanical trains, since the present invention is particularly directed to an improvement in the bodies of the vehicles or units which contribute to the make-up and appearance of a solid train.

Since the novel features of the present invention are directed to a train including units or vehicles having novel vestibule sections, the description of one unit will apply to all.

Therefore, taking the unit B as an example, reference may be made to Figure 2. The unit preferably comprises a body section 1 consisting of sides 2—2, top 3 and bottom 4 fashioned to simulate a selected type of vehicle and mounted on wheeled trucks W. At each end of the body 1 there is provided a novel movable vestibule section 5. This section preferably comprises a wall or body 6 which constitutes in effect an end wall for the body and is provided with the inwardly directed or offset flange portions 7 which preferably conforms to the general cross-sectional shape of the top and sides of the body 1. The length or depth of the flange 7 is in all cases sufficient to overlap with contiguous portions of the body 1 regardless of the angular disposition of the walls 6 with reference to the body, and, therefore, the vestibule section is in substantially telescopic relation to the body to preserve a substantially unbroken or continuous surface between the vehicles when they are linearly or angularly disposed.

For the purpose of movably mounting the vestibule section on the car body, the top of the flange portion 7 is preferably provided with an opening 8 and the end wall 6 is provided with a rearwardly extending supporting member 9 adapted to rest on the bottom 4 of the car body and provided with an opening 10 aligned with the opening 8. The openings 8 and 10 are intended to receive pivot means 11. In the form shown in Figures 1 to 8 inclusive, this pivot means is preferably in the form of a rod or pin which passes through openings in the top 3 and bottom 4 of the car body and likewise passes through the openings 8 and 10. The lower end of the rod may be provided with a nut or equivalent abutment 12 and in the case of the pivot for the female section may have its upper end headed to engage the top or roof of the car body. The pivot pin 11 at the other end of the car, that is the pivot member for the male vestibule section 5, may be provided at its upper end with a coupler extension 13 carrying a coupling hook 14 adapted to engage with an opening 15 in the mating vestibule section of an adjacent car. Thus, it will be apparent that the vestibule section at one end of the car includes a male coupling element while the section at the opposite end of the car includes a female coupling element, so that the vestibule sections of adjacent cars constitute mating coupler parts. Accordingly, it is possible to readily connect one vehicle with another by simply dropping the hook 14 into the opening 15 of an adjacent vestibule section. To uncouple the cars, it is only necessary to lift the coupler extension 13 so that the hook 14 will clear the opening 15. In lifting the coupler 13—14, the nut 12 on pin 11 will prevent disengagement of the pin from the car.

A feature of practical importance also resides in the provision of means for aligning the vestibule sections on adjacent units. This means, in the embodiment shown in the Figures 1 to 8 inclusive consists of an aligning element 16 in the form of a tongue projecting from the end wall of one of the vestibule units and adapted to cooperate with an opening 17 in the end wall of the opposite or adjacent vestibule section. The aligning element 16 in this form of the invention is preferably located centrally of the vestibule section and has its outer end formed with a recess or notch 18 adapted for alignment with the opening 15 which receives the coupling hook 14 so that after the latter passes through the opening in the vestibule section having the opening 17, the said notch will receive the end 14 of the coupling and, therefore, compel the pin and coupler to always assume the same radial position with reference to the axis of the pivot 11 as does the section 5 which carries the aligning element 16. In this way, the engaged vestibule sections 5—5 are caused to move together without lateral slipping or sidewise movement, thus effectively aligning and maintaining the cars in proper coupled relation.

By way of illustrating a modification in the aligning and coupling means, reference may be made to Figures 10 and 11 of the drawings. In this form of construction, the vestibule sections 5—5 may be pivotally connected to the car bodies by the pins 11^a corresponding to the pivot pins 11 in Figures 1 to 8. The coupling means, however, is separate from the pivots in the sense that it is not a part of the pivot pin. That is to say, as will be observed from Figure 10, the coupling 13^a may be pivotally supported in the opening 13^b in the upper portion of the flange 7 of the vestibule section and the hook portion 14^a thereof may be inserted in the opening 15^a of the opposite vestibule section. Also, it will be observed from Figures 10 and 11 that the aligning means may be modified to the extent that each of the vestibule sections 5 may be provided with tongue 16^a and an opening 17^a spaced apart from each other and adapted to interfit with corresponding portions in the end wall of the opposite but adjacent vestibule section. Thus, it will be apparent that the coupling means is not necessarily associated with the pivot means for the vestibule section. However, in both forms of construction, it will be apparent that the coupling means may be disposed at the top of the vestibule section, thereby to be readily accessible and render it entirely unnecessary to move the cars from their position on the track to couple or uncouple them.

The aligning means on the vestibule sections is not only important from the standpoint of preventing relative lateral slipping between the vestibule sections, but also materially assists in effecting coupling of the sections on curves. Assuming that the car bodies occupy an angular relation, as they would on a curve, it will be apparent that upon bringing them into abutting relation the first parts which will engage will be the aligning means. When the interfitting aligning

elements are engaged, the coupling means may be readily placed in position.

Another distinctive feature of the invention resides in providing simple, practical and adequate illuminating means not only for the individual cars, but also for the locomotive. To that end, each of the individual vehicle units or cars may be equipped with a lamp 20, one terminal of which is grounded in accordance with the customary practice, while the other terminal is included in a circuit comprising the insulated wires 21 whose opposite ends are connected as at 22 with an insulated support 23 carried by the end wall 6 of the vestibule section 5. The fastening 22 which connects the wire 21 with the insulations 23 is also utilized to connect a yielding contact member 24 to the piece of insulation. As will be apparent from Figure 2 for example, the contact 24 is so positioned as to engage with a corresponding contact on an adjacent vestibule section. Thus, electrical current may be conveyed through the lamps 20 from any suitable source, as for example a storage battery in a wind-up type of train or from the third rail of an electrical train unit through the medium of the trolley 25 (Figure 1). The yielding or spring contact members 24 also serve as a means for preventing lost motion in the means for connecting or coupling the wheeled units. That is to say, when the cars are coupled by the connecting means 14—15, the springs 24 will be compressed and tend to force the connecting means apart to take up lost motion and prevent rattling of the connected sections while at the same time assisting in maintaining them in better alignment and properly coupled.

In connection with the locomotive A it may also be pointed out that the front end thereof is preferably formed to simulate a cab or cabin A' having streamline characteristics and provided with the window openings A^2 and a headlight opening A^3. For the purpose of illuminating the cabin windows and the headlight, it is proposed to mount an angular bracket 26 in the forward part of the locomotive body, the said bracket being supported by the fastening 27 and carrying therewith, on the raised tongue of its horizontal portion, a suitable electric lamp 28. One terminal of this lamp is grounded to the metallic car body which is in the ground side of the electrical circuit due to the fact that the body is in contact with the wheels W which engage the outer or ground rails of a toy railway track, and current is supplied from the usual insulated third rail to the trolley 25 and thence to the other terminal of the lamp 28 by a suitable insulated wire connection 29. The vertical wall of the bracket 26 acts as a reflector and provides in effect a chamber at the front end of the locomotive which houses a lamp 28 and insures that the opening A^2 and A^3 be flooded with sufficient light to give the front end of the locomotive a realistic appearance.

It may also be pointed out that the manner of illuminating the various cars as proposed herein eliminates extra cost incident to mounting a separate trolley on each car. In other words, since the present invention is particularly concerned with improvements in individual vehicle units which make up a unit train, it is contemplated that all of the units be connected to give the appearance of a continuous train. Hence, the particular contact means employed effectively makes this feature possible.

From the foregoing it will be apparent that the present invention provides a toy train wherein the wheeled vehicle units include bodies having their ends so fashioned as to close the gap between the cars and the ends so fashioned may also be articulated to freely permit relative angular movement between the car bodies. Also, the embodiment shown permits the vehicles to be readily coupled and uncoupled from the top of the car bodies.

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 train comprising a plurality of wheeled units, each including a body, means on each body for closing the gap between the same and an adjacent body to provide a complete train of substantially unbroken external continuity, said means comprising a one-piece end wall having portions overlapping with the end of the body, means for pivotally connecting said end wall to the body, and means at the top of said end wall for connecting the same to the corresponding member of an adjacent unit and coupling adjacent units together.

2. A toy train comprising a plurality of wheeled units, each including a body, means on each of the bodies for closing the gap between the same and an adjacent body to provide a complete train of substantially unbroken external continuity, said means comprising a one-piece end wall having portions overlapping with the end of the body, means for pivotally connecting said end wall to the body, and means associated with the top of one of said bodies and one of the juxtaposed end walls on an adjacent body to connect the units together thereby to couple said units together in train formation.

3. A toy train comprising a plurality of wheeled units each including a body, means on each body for closing the gap between the same and an adjacent body to provide a complete train of substantially unbroken external continuity, said means comprising a one-piece member having portions overlapping with the end of the body, means for pivotally connecting said member to the body, means associated with the juxtaposed members on adjacent bodies to connect the same together and holding adjacent bodies in coupled relation, and aligning means cooperating with said last named means to prevent relative lateral shifting movement between said juxtaposed members.

4. A toy train unit including a body, an end wall for the body having horizontally disposed flange portions, means for pivotally mounting said end wall on the body whereby, in changing its relative angular position with reference to the body, the flange portions will provide, in effect, movable body wall extensions, and coupling means for connecting said end wall to the end wall of an adjacent unit thereby to couple the body to an adjacent body through said end wall.

5. A toy train unit including a body, an end wall for the body having inwardly disposed flange portions and constituting a vestibule section, means for movably mounting said section on the body whereby in all positions of movement of the section, the same is telescopically related to the body, and coupling means for connecting

said end wall to the end wall of an adjacent unit thereby to couple the body to an adjacent body through said end wall.

6. An articulated toy train including adjacent wheeled units, comprising bodies having movable vestibule sections arranged in juxtaposed relation, and means engaging said vestibule sections to couple the units together through said vestibule sections.

7. An articulated toy train including adjacent wheeled units comprising bodies having pivoted vestibule sections arranged in juxtaposed relation, pivoted means for connecting the tops of said vestibule sections to couple adjacent units together, and means for preventing lateral shifting of said sections.

8. A toy train unit including a body having a vestibule section at the end thereof, and a pin for pivotally connecting the vestibule section to the body and having a hook for engaging the vestibule member of an adjacent unit.

9. A toy train unit including a body having a vestibule section at the end thereof, a pin for pivotally connecting the vestibule section to the body and having a hook for engaging the vestibule member of an adjacent unit, and an aligning element on the said vestibule section adapted to interfit with a mating portion on the vestibule section of an adjacent unit and also to receive said hook to compel the hook and its associated vestibule section to move together.

10. A toy train including in combination, a pair of vehicle bodies, end walls simulating vestibule sections carried by the adjacent ends of said vehicle bodies, pivot means for connecting said end walls to the bodies, and means accessible from the exterior of said end walls and bodies for connecting the end walls and coupling the bodies together.

11. A toy train including in combination, a pair of vehicle bodies, end walls simulating vestibule sections carried by the adjacent ends of said vehicle bodies, pivot means for connecting said end walls to the bodies, means accessible from the exterior of said end walls and bodies for connecting the end walls and fastening the bodies together, and complemental elements respectively carried by each end wall and adapted for interfitting engagement to prevent lateral movement of the end walls when connected and causing relative movement between the connected end walls and the bodies to be localized at said pivot means.

12. A toy train including in combination, a pair of vehicle bodies, one-piece end walls simulating vestibule sections carried by the adjacent ends of said vehicle bodies, pivot means for connecting said end walls to the bodies, and fastening means accessible from the tops of said bodies for connecting the end walls and coupling the bodies together.

13. A toy train unit including a body having movable one-piece vestibule sections at opposite ends thereof, said sections respectively having male and female interfitting parts, and means for fastening said bodies together, a part at least of said fastening means engaging one of said sections.

14. A toy train comprising a plurality of wheeled units including bodies having pivoted end walls simulating vestibule sections, and hooking means for connecting said pivoted end walls whereby they may be maintained in substantially abutting relation regardless of the change in the relative angular position of said bodies, said hooking means also maintaining adjacent bodies in train formation.

15. A toy including a body simulating a railway vehicle, and a one-piece end wall pivotally mounted at each end of said body and simulating a vestibule section.

16. A toy including a body simulating a railway vehicle, vestibule simulating sections of substantially U-shape in horizontal cross-section and formed of a single piece of sheet material, and means for loosely connecting said vestibule sections to the ends of said body.

17. A toy train including wheeled units having articulated vestibule sections, means for coupling said sections, spring means on said sections tending to keep said coupling means under tension, and insulated members carrying said springs whereby they may serve as current conductors between said wheeled units when the same are coupled.

18. A toy train comprising adjacent wheeled units each including a body, vestibule sections pivoted respectively to adjacent ends of each body, means for connecting said sections to couple the adjacent wheeled units for articulated movement, an insulated member on each section, and springs on said insulated members adapted to engage with each other when the sections are connected to take up lost motion in the connecting means and also to serve as an electric conductor between the wheeled units.

19. A toy train comprising adjacent wheeled units each including a body, vestibule sections pivoted respectively to adjacent ends of each body, means for connecting said sections to couple the adjacent wheeled units for articulated movement, an insulated member on each section, and metallic conductor elements on said insulated members, at least one of said conductor members being compressible when the units are connected to take up lost motion in the means for connecting the sections.

20. A toy train including in combination, vehicle simulating bodies, vestibule simulating sections therefor, means for connecting said bodies, and spring tensioning elements rendered effective when the bodies are connected to hold the same coupled under spring tension, said elements being insulated from the bodies to also serve as a conductor for electric current therebetween.

21. A toy train including railway vehicle simulating bodies, vestibule simulating sections at the ends of said bodies, means for connecting said bodies for articulated movement and spring means cooperating with said last mentioned means to take up lost motion therein when the bodies are connected.

22. An articulated toy train comprising adjacent wheeled units including movable vestibule simulating sections arranged in juxtaposed relation, and means cooperating with the movable vestibule sections to connect the units together in train formation through the said sections.

23. A toy train comprising a plurality of wheeled units including bodies having movable end closures, said end closures mounted within the ends of said bodies and adapted to continuously effect closure of the ends of said bodies in any position of movement of said end closures, and external means for releasably connecting one of said end closures to an end closure of an adjacent body thereby to couple the units together in train formation.

24. A toy train comprising a plurality of wheeled units each including a body, a member on

each body cooperating with a similar member on an adjacent body for closing the gap between the same and an adjacent body to provide a complete train of substantially unbroken external continuity, said member being in one piece and having portions overlapping with the ends of the body, means for pivotally connecting said member to the body, and means associated with the juxtaposed members on adjacent bodies to connect the same together and hold adjacent bodies in coupled relation.

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