

May 26, 1970

M. ERNST

3,513,592

TOY VEHICLE, ESPECIALLY RAILWAY TOY VEHICLE

Filed July 31, 1967

Fig. 1

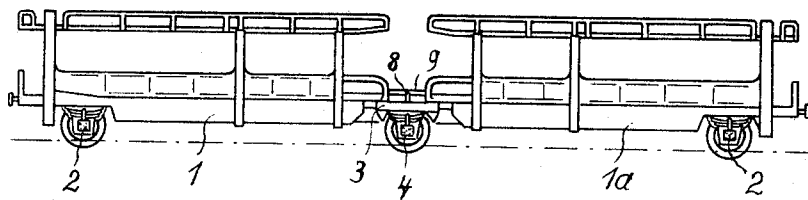


Fig. 2a

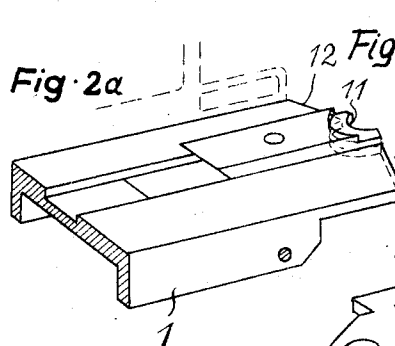


Fig. 2c

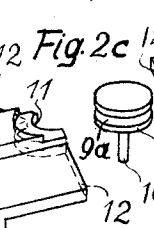


Fig. 2b

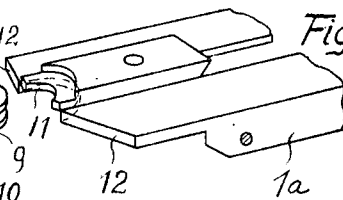


Fig. 2d

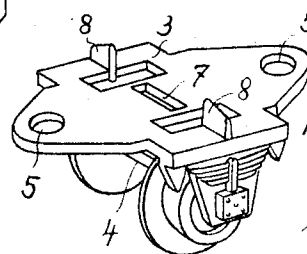


Fig. 2f

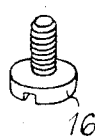


Fig. 2e

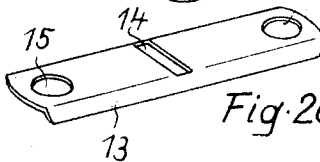


Fig. 2g

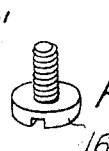


Fig. 3

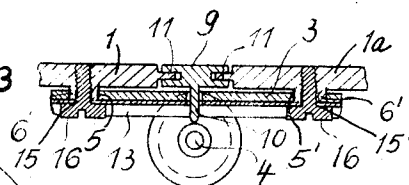


Fig. 4

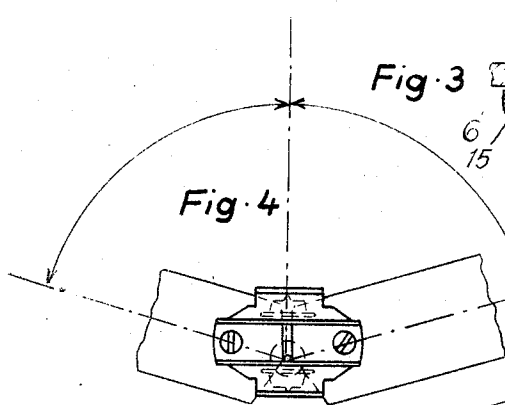
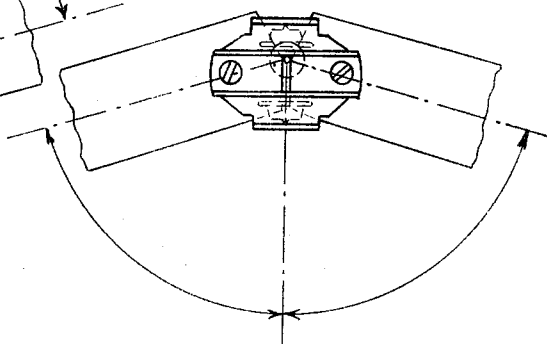


Fig. 5



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TOY VEHICLE, ESPECIALLY RAILWAY TOY VEHICLE

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Filed July 31, 1967, Ser. No. 657,314

Claims priority, application Germany, Aug. 9, 1966,

E 32,246

Int. Cl. A63h 19/05

U.S. Cl. 46—216

7 Claims

ABSTRACT OF THE DISCLOSURE

A two-sectional toy or model railroad freight car which according to the invention comprises two identical sections arranged as an image to each other while a bearing stool with a wheel axle is interposed between and on opposite sides of said wheel axle is pivotally connected to said car sections. In addition thereto additional pivot means common to and in pivotal engagement with both of said car sections is guided in said bearing stool intermediate said first-mentioned pivotal connections of the car sections with said bearing stool in the direction of the longitudinal extensions of the wheel axle on said bearing stool.

The present invention relates to a toy vehicle, especially railway toy vehicle adapted to transport toy automobiles.

Commercial automobiles when shipped from the factory are, for purposes of saving space, transported from the factory to their destination by means of multi-story vehicles such as trucks or special freight cars. Furthermore, in order to increase the loading capacity rather long vehicles are employed, especially three-axle vehicles with a joint in the center area or over the third axle.

It is an object of the present invention to provide a toy vehicle forming an imitation of such transport vehicle, especially freight car vehicle.

It is a further object of this invention to provide a toy vehicle as set forth in the preceding paragraph which while having a relatively great length, will also be able to pass through relatively sharp curves.

These and other objects and advantages of the invention will appear more clearly from the following specification in connection with the accompanying drawing, in which:

FIG. 1 diagrammatically illustrates a side view of a toy freight car according to the present invention;

FIGS. 2a-2g respectively illustrates details of the toy freight car according to FIG. 1 and in particular the individual structural elements forming the central bearing stool or truck;

FIG. 3 is a longitudinal section through said bearing stool or truck;

FIGS. 4 and 5 respectively illustrate the central portion of the freight car of FIG. 1 in opposite angular positions of the vehicle sections as seen from the bottom.

The three-axle toy vehicle according to the present invention is characterized primarily in that the preferably multi-story toy vehicle comprises two equal sections which are in horizontal direction pivotally interconnected by means of a bearing stool connected to an intermediate axle, in such a way that in any angular position of the two vehicle sections, the wheel axle on the bearing stool confines at least approximately the same angle with the wheel axles at the two ends of the vehicle.

In particular, it is suggested according to the present invention to couple to each other those ends of the two vehicle sections which face each other. This coupling is effected through the intervention of a guiding body which is displaceable transversely to the longitudinal direction of the vehicle, said guiding body through the intervention

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of guiding means holding said bearing stool in its angle-bisecting intermediate position.

According to an advantageous feature of the invention, the guiding body may consist of a roller provided with a notch engaged by extensions respectively connected to adjacent portions of the two vehicle sections and provided with a semi-circular recess. The roller may be provided with a downwardly extending pin which is displaceable in a transverse slot in said bearing stool.

The present invention makes it possible to produce a toy vehicle for transporting toy motor cars while said toy vehicle will be able, in spite of a relatively great length to pass through sharp curves.

Referring now to the drawing in detail, the vehicle shown in FIG. 1 comprises two substantial identical sections 1 and 1a each of which is provided at one end with a fixed wheel axle 2. Those portions of said vehicles which face each other are journaled on a bearing stool 3 so as to be pivotable about vertical axes. The bearing stool 3 is provided with a wheel axle 4. The platform of the bearing stool 3 has two bearing eyes 5, 5' in which the two vehicle sections 1, 1a are journaled with respect to the bearing stool 3 by means of a downwardly extending collar 6, 6' respectively, of each of the vehicle sections 1, 1a and fitting axially into eyes 5, 5' of the bearing stool 3 (see FIG. 3). The bearing stool 3 is above the wheel axle 4 provided with a transverse slot 7 while two abutments 8 above the platform of the bearing stool 3 are located along the extension of said transverse slot 7.

Between the two vehicle sections there is provided a guiding body in the form of a grooved roller 9 with a downwardly extending pin 10 for extending into the slot 7 on the bearing stool. The two vehicle sections 1, 1a are provided with extensions 11 having a semi-circular recess, said extensions 11 being adapted to engage the groove 9a of the guiding body 9. Adjacent the said extensions the two vehicle sections are provided with inclined surfaces 12 which together with the horizontal transverse axis define about half of the possible pivot angle of the two vehicle sections. Below the bearing stool 3, which may consist of synthetic material polystyrol, there is provided a reinforcing plate 13 with upwardly extending marginal portions which is likewise provided with a transverse slot 14 for the passage of the guiding pin 10. This reinforcing plate is furthermore equipped with openings 15, 15' for the passage of one connecting screw 16, 16' each.

The individual structural elements shown in FIGS. 2a-2g may be connected to each other by means of the two screws 16, 16' in a manner illustrated in section in FIG. 3. The two vehicle sections 1, 1a may occupy the extreme angular position shown in FIGS. 4 and 5 in which the guiding body 9 will engage one or the other of the two abutments 8. During this angular movement, the pin 10 moves in slot 7 on the angle-bisecting line so that the wheel axle 4 in each position will occupy the same angle with the two end axles 2 of the vehicle.

It is, of course, to be understood, that the present invention is, by no means, limited to the particular construction shown in the drawing, but also comprises any modification within the scope of the invention.

What I claim is:

1. A freight car for toy and model railroads, especially for transporting toy automobiles, which includes: a first car section, a second car section substantially identical to said first car section but arranged as an image to said first car section, each of said car sections having those ends thereof which are remote from each other provided with a wheel axle and wheels, intermediate bearing stool means including coupling means interposed between and pivotally interconnecting those ends of said car sections which are adjacent to each other, and a third

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axle with wheels connected to said bearing stool means, said coupling means including guide means movable on said bearing stool means in the direction of the axis of said third axle whereby in each angular position of said wheel sections with regard to each other the said third axle defines approximately the same bisected angle with each of the first mentioned two wheel axles.

2. A car according to claim 1, in which said guide means movable on said bearing stool means forms a groove defining a pivot about which both of said car sections are pivotable.

3. A car according to claim 1, in which said guide means movable on said bearing stool means comprises a grooved roller having a downwardly directed extension, and in which said stool means is provided with a transverse slot extending parallel to the axial direction of said third axle and receiving and guiding said downwardly directed extension, those ends of said two vehicle sections which face each other respectively being provided with semi-circularly cut-out end portions engaging the groove of said grooved roller.

4. A car according to claim 3, in which said stool means is near the ends of said slot provided with opposite abutment means thereon for limiting the movement of said roller having said downwardly directed extension in said slot.

5. A car according to claim 1, in which those ends of said two car sections which face each other are provided with divergent inclined surfaces symmetrically arranged with regard to the longitudinal axis of said sections and flaring toward those ends of said car sections which are remote from each other, the inclined surfaces on one and the same side of the longitudinal plane of symmetry of

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said car sections at the maximum angular spacing from each other defining with each other the maximum pivoting angle of said car sections relative to each other.

6. A car according to claim 1, in which said bearing stool means is provided with two bores arranged in longitudinal alignment along a line transverse to said third axle, and in which said car sections have those ends thereof which face each other provided with downwardly extending collar pivot means respectively extending into said bores and forming the pivotal connection of said car sections respectively with said bearing stool means.

7. A car according to claim 6, which includes reinforcing means arranged at the bottom side of said stool means and provided with passages arranged in axial alignment with said longitudinally aligned bores, and screw bolt means extending axially through said passages into said collar pivot means.

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U.S. Cl. X.R.

46—218; 105—4