Sept. 13, 1927. 1,642,276

W. H. STRICKLER

COASTER CAR AND TRACK THEREFOR

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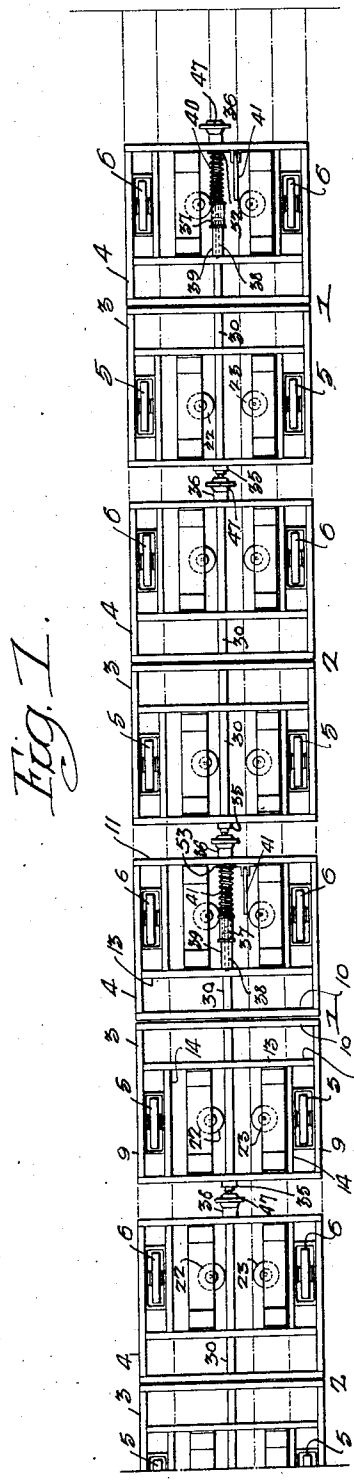

Fig. 1.

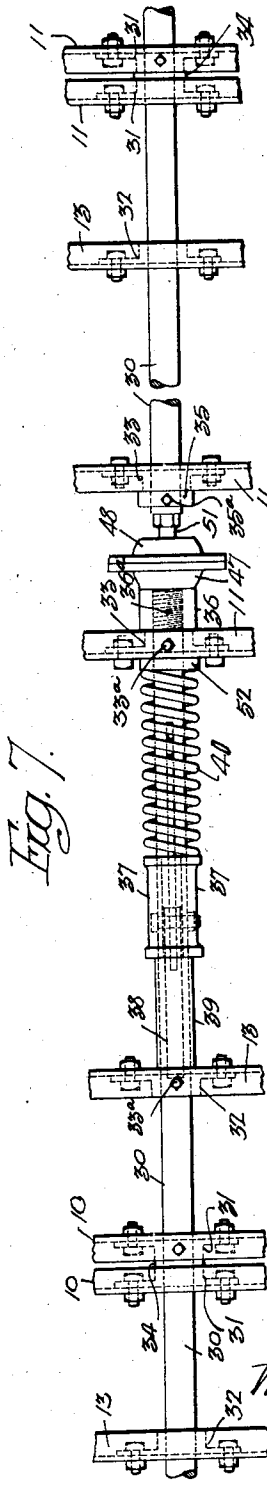

Fig. 7.

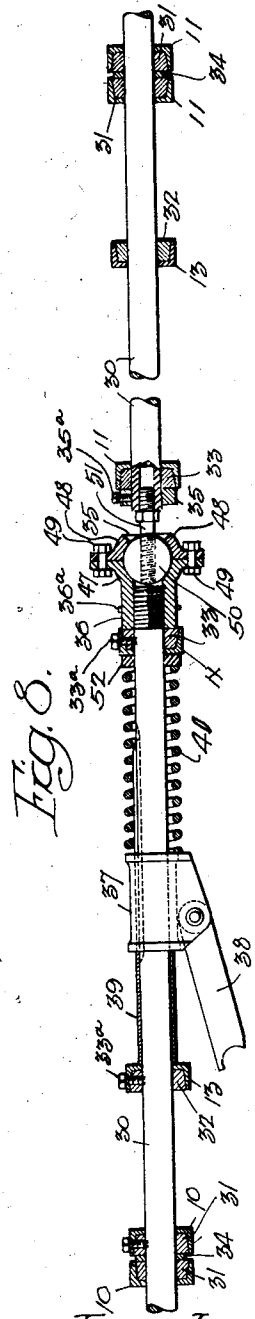

Fig. 8.

Inventor—
William H. Strickler
by his Attorneys—
Howson & Howson

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Fig. 2.

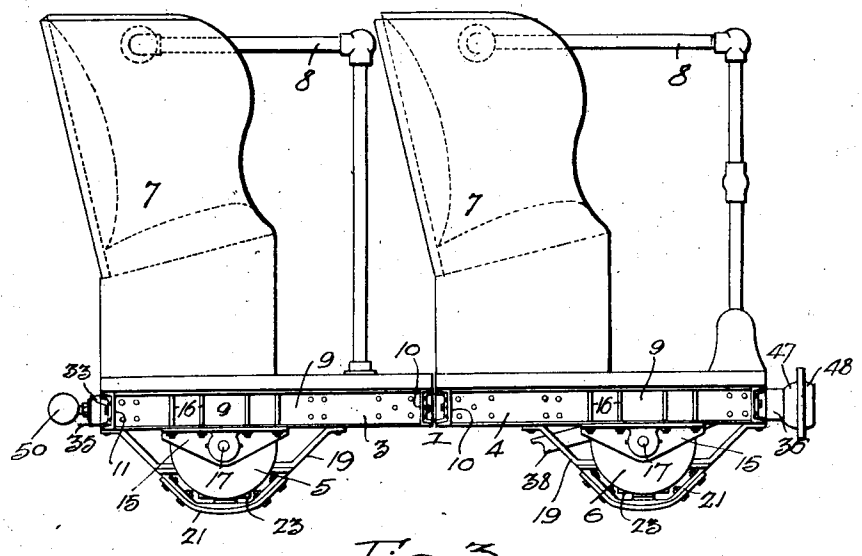
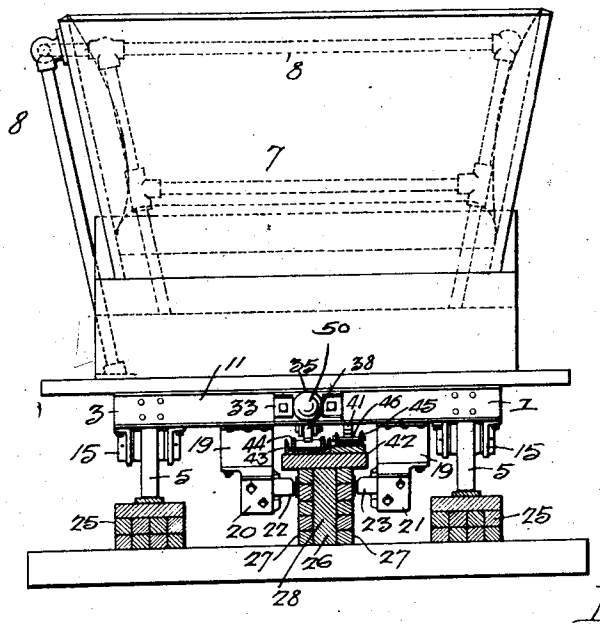


Fig. 3.



Inventor.—
William H. Strickler.
By his Attorneys.—
Howson & Howson

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W. H. STRICKLER

COASTER CAR AND TRACK THEREFOR

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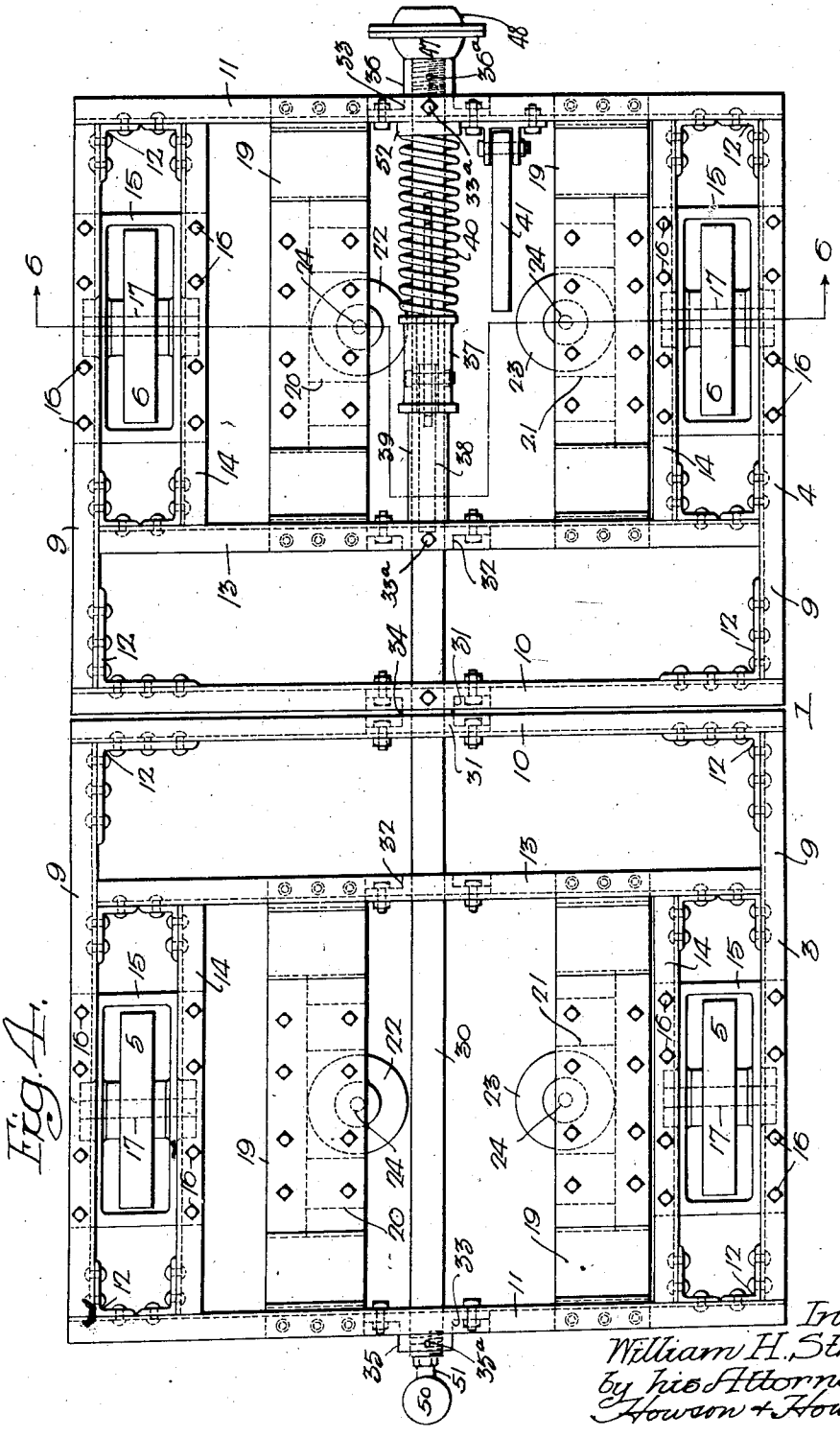

Fig. 4.

Inventor—
William H. Strickler
by his Attorneys—
Howson & Howson

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W. H. STRICKLER

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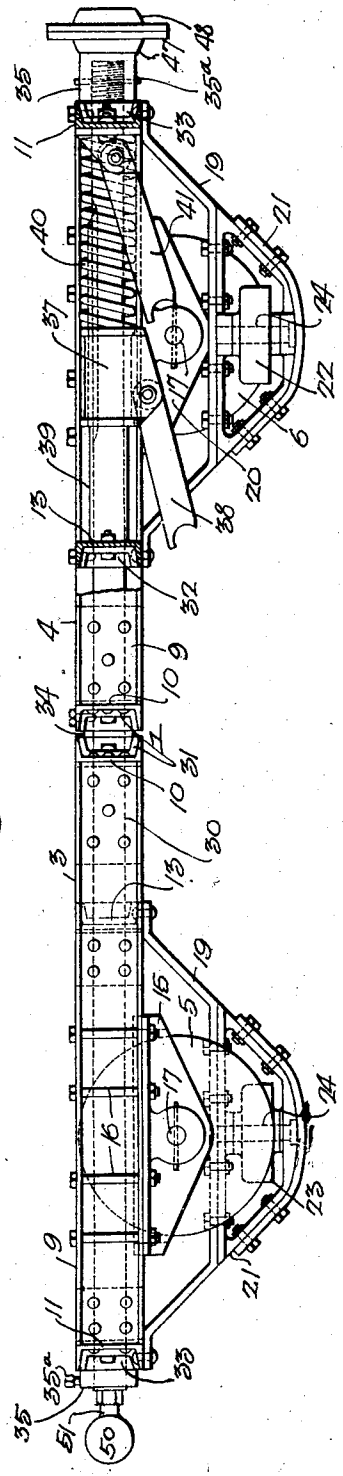

Fig. 5.

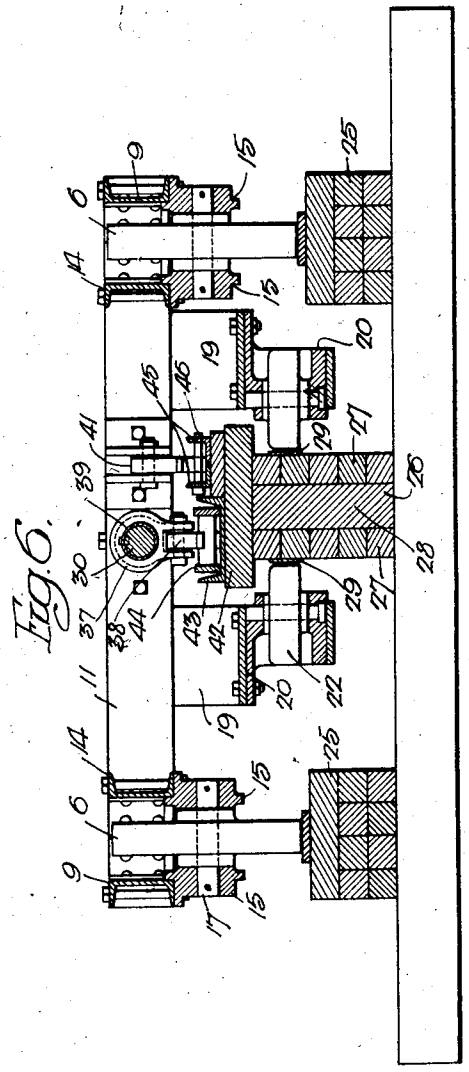

Fig. 6.

Inventor:—
William H. Strickler
by his Attorneys.—
Howson & Howson

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W. H. STRICKLER

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Fig. 9.

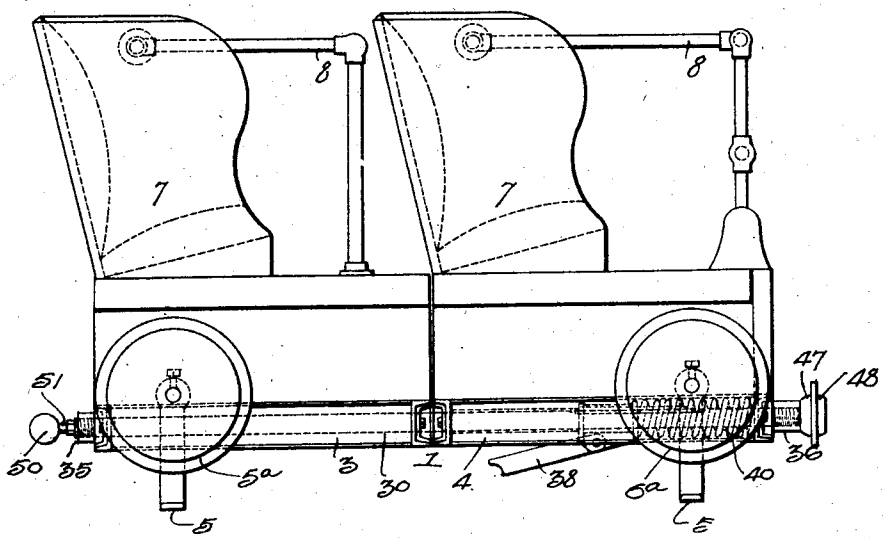
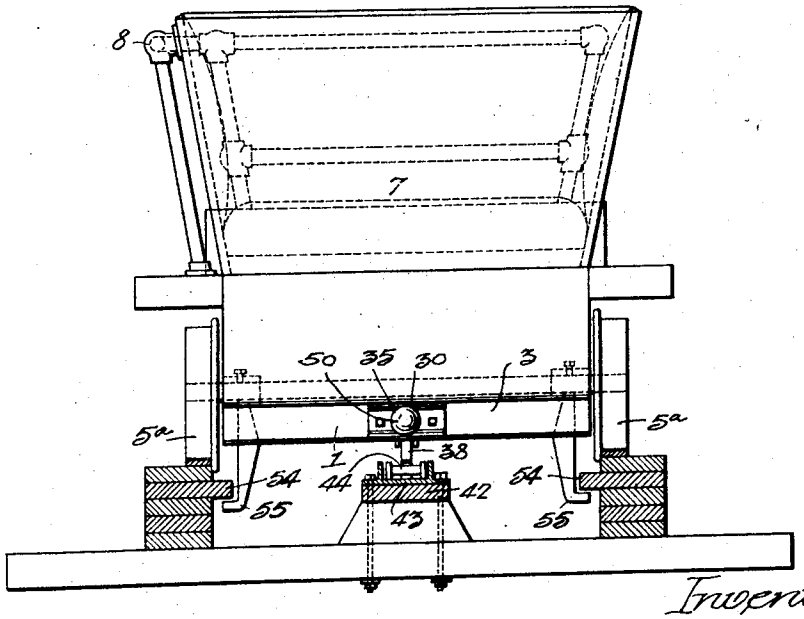


Fig. 10



Inventor—
William H. Strickler
by his Attorneys—
Howson & Howson

Patented Sept. 13, 1927. 1,642,276

UNITED STATES PATENT OFFICE.

WILLIAM H. STRICKLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM H. DENTZEL, OF PHILADELPHIA, PENNSYLVANIA.

COASTER CAR AND TRACK THEREFOR.

Application filed January 16, 1926. Serial No. 81,734.

This invention relates primarily to a car for use on coaster railways or to a train of such cars, but as concerns some of its features the invention also includes the track upon which the car or the train is adapted to travel.

One of the objects of the invention is to provide an improved chassis construction for a car of this type wherein great strength and rigidity are secured, the invention making it possible for the chassis to be constructed entirely of metal.

Another object of the invention is to provide a car chassis of this type wherein there are two relatively movable main sections which are adapted to accommodate themselves to varying inclinations of the track rails.

A further object of the invention is to provide improved means for connecting together a series of similar cars of the type specified to form a train.

Still another object of the invention is to provide in a car of the class described improved guide mechanism which is adapted to cooperate with a guide rail on the track to hold the car against lateral movement.

A still further object of the invention is to provide an improved driving device for the car, this driving device being adapted to cooperate with a driving chain.

Still another object of the invention is to provide an improved general arrangement of parts whereby the guide mechanism, the driving device and the safety device are located in improved relationship.

A further object of the invention is to provide an improved combinational relationship between a car embodying the invention and a track of peculiar type adapted to cooperate with the car.

Still further objects of the invention will be apparent from the following specification and claims.

In the accompanying drawings, I have shown certain embodiments of the invention which have been selected for purposes of illustration, but it will be understood that the drawings are not to be construed as defining or limiting the scope of the invention, the claims forming a part of the specification being relied upon for that purpose.

It will further be understood that the track structure which is shown in part does not of itself constitute a part of the present invention, this track structure forming the subject-matter of my copending application for coaster track structure filed Jan. 16, 1926, Serial No. 81,733.

Of the drawings:

Figure 1 is a plan view of a train of coaster cars embodying the invention, the body superstructure being omitted for the sake of simplicity;

Fig. 2 is a side view of one of the cars;

Fig. 3 is an end view of one of the cars and a transverse section of the track;

Fig. 4 is an enlarged plan view of the chassis of one of the cars, the superstructure being omitted for the sake of clearness;

Fig. 5 is a side view of the chassis shown in Fig. 4, some of the parts being broken away to show other parts more clearly;

Fig. 6 is a transverse sectional view taken along the line 6—6 of Fig. 4;

Fig. 7 is a fragmentary plan view showing parts of the driving and connecting mechanism for two adjacent cars;

Fig. 8 is a side view, partly in section, of the parts shown in Fig. 7; and

Figs. 9 and 10 are views similar respectively to Figs. 2 and 3, but showing an alternate embodiment of the invention.

Figure 1 represents a train of cars 1, 1, and 2, 2, embodying the invention, four of such cars being shown. It will be understood that all of the cars are or may be of the same construction. Preferably, however, I prefer to provide each alternate car, that is, the cars 1, 1 as shown, with driving and safety devices which will be hereinafter more fully described. For the sake of economy and simplicity, these devices may be omitted from the remaining cars 2, 2.

Each of the cars comprises two sections 3 and 4 which are relatively movable about a central longitudinal axis. The sections 3 and 4 are provided respectively with main supporting wheels 5, 5, and 6, 6. The two sections are provided respectively with seats 7, 7, and with protective hand rails 8, 8. Inasmuch as the two sections 3 and 4 are relatively movable about a central longitudinal axis, it will be apparent that the car is well adapted to accommodate itself to variations in the inclinations of the respective rails such as are to be found in coaster railways, particularly at points where there are changes in the track curvature.

The details of construction of the car chas-

sis are more clearly shown in Figs. 4, 5 and 6. As already stated, the chassis is particularly adapted to be constructed entirely of metal, and the preferred metallic construction will now be described in detail. It will be apparent that the two sections 3 and 4 of the car are of substantially the same construction except for the fact that they are reversed.

Each of the sections 3 and 4 comprises a rectangular framework which preferably includes longitudinal side members 9, 9, and transverse members 10 and 11. These members may be structural steel sections, such as channel bars, and they may be suitably connected together at the corners by means of angle bars 12, 12. Preferably a third transverse member 13 is provided adjacent the member 10, and short longitudinal members 14, 14, are provided extending between the members 11 and 13.

Secured to the respective members 9 and 14 at the two sides of the frame are bearing brackets 15, 15, for the main wheels. These brackets are suitably secured in place, as for instance by means of the bolts 16, 16. Suitably located in transverse holes in each of the brackets 15 is a bearing pin 17 on which is rotatably mounted one of the car-supporting wheels 5—5 and 6—6. Preferably and as shown in Figs. 4 to 6, these wheels are of the plain unflanged type.

Extending longitudinally between the transverse members 11 and 13 and secured thereto are bolsters 19, 19. Secured to these bolsters are bearing brackets 20 and 21, which are similar in construction but which are oppositely located with respect to the bolsters. These brackets 20 and 21 are provided with recesses adapted respectively to partly receive guide wheels 22 and 23. Vertical bearing pins 24, 24, are provided for these wheels, these bearing pins being seated in suitable apertures in the bracket.

In Fig. 6, I have shown the chassis in the position which it assumes on the track. It will be seen that rails 25, 25, are provided for supporting the main wheels 5—5 and 6—6 and that a guide rail 26 is provided for engaging the guide wheels 22 and 23. The guide rail 26 preferably comprises two parallel planks or two series of superposed bars 27, 27, secured to central supporting bars 28. Wearing strips 29, 29, may be provided to contact with the wheels 23 and 24. It will be seen that the wheels 23 and 24 in cooperation with the guide rail serve to hold the car in proper relation to the track and to prevent it from moving laterally with respect thereto.

For connecting together the two main sections 3 and 4 of the chassis, there is provided a longitudinal bar or heavy tube 30 which is of circular cross section and which extends the entire length of the car. This bar extends through suitable apertures formed in the transverse members 10, 10, 13, 13, and 11, 11. Preferably as shown more clearly in Fig. 8, bearing blocks 31, 32 and 33, are provided at the respective transverse bars 10, 13 and 11, these blocks being provided with suitable apertures through which the bar 30 extends. The bearing blocks for one of the sections, as for instance the section 4, are secured to the bar 30 by suitable means, as for instance set screws 33^a. Located between the central bearing blocks 31, 31, and surrounding the bar 30 is a washer 34 which serves to hold the blocks 31, 31, and the transverse members 10, 10, in spaced relation. Secured to the ends of the bar 30, preferably by being threaded thereon, are collars or nuts 35 and 36 which abut against the respective end bearing blocks 33, 33. Taper pins 35^a, 36^a, may be provided for preventing the two collars 35 and 36 from turning.

From the foregoing description it will be seen that the bar 30 serves to connect the two main sections of the frame but at the same time permits them to turn relatively to each other about the axis of the bar. The washer 34 serves to maintain a proper spacing between the two frame sections and also serves as a thrust bearing when relative movement takes place. The two collars or nuts 35 and 36 serve to prevent the two frame sections from being longitudinally separated.

In order that the cars may be suitably driven by means of a chain, I provide them, or at least some of them, with driving devices adapted to engage a chain. As shown in Figs. 4 to 6, a collar 37 is splined on the bar 30 and carries a pivoted dog or sprag 38 which is adapted to be engaged by one of the shoulders of a chain. Preferably a pipe 39 surrounds the bar 30 and serves as a spacing member between the collar 37 and the transverse member 13. A heavy coil spring 40 surrounds the rod 30 and is interposed between the transverse member 11 and the collar 37. It will be seen that when the sprag 38 is engaged by the chain, the driving of the car is effected through the spring, which thus serves as a shock absorber to prevent any undue shock when the sprag first engages the chain.

As a safety device to prevent backward movement of the car in case of accident of any kind, I provide a dog or sprag 41 which is secured to the transverse member 11 adjacent the bar 30. This safety sprag 41 is adapted to engage a suitable toothed detent device which is arranged in suitable position along the track.

For the purpose of carrying the guideway for the actuating chain and for also carrying the safety detent device, I preferably provide a member 42 which forms a

part of the guide rail 26. This member 42 is preferably in the form of a plank which overlies the supporting bars 28 and the longitudinal guide bars 27, 27. Preferably this projects laterally in the form of ledges at both sides of the bars 27, 27. These lateral projecting ledges have the additional advantage of serving as a safety means to engage the guide wheels 22 and 23 to prevent the car from jumping the track or tipping over sideways in case of any emergency.

As shown in Fig. 6, the plank 42 carries a channel bar 43 which serves as a guide for a drive chain 44. The plank 42 also carries two angle bars 45, 45, so placed as to form a channel, between which extend transverse bolts or pins 46 which serve as safety devices adapted to be engaged by the safety sprag 41.

It is desirable to have the connecting bar 30 for the two main sections of the car chassis located at the center of the car. Inasmuch as the guide rail is used to support both the chain guide 43 and the safety retaining devices 45, 45, and 46, 46, the said guide rail is preferably located a short distance to one side of the center of the track, as clearly shown in Fig. 6. The bolsters 19, 19, are correspondingly located so as to bring the guide wheels 22 and 23 into proper relation with the guide rail.

In order that several cars may be connected together to form a train, as shown in Fig. 1, I provide suitable coupling devices. As shown in detail in Fig. 8, the nut 35 is formed as a part of a ball socket 47, this socket being completed by a cap 48 held in place by bolts 49. A ball 50 fits this socket and this ball is carried by a stem 51 which is threaded into the end of the tube 30 of the next adjacent car. It will be seen that the coupling described permits adjacent cars to move relatively to each other in any direction. Any tube 30 can turn about its axis relatively to the next adjacent tube and thus the cars can accommodate themselves to varying transverse inclinations of the track.

When several cars are connected as shown, each alternate car may be provided with driving devices adapted to engage the drive chain. Preferably the distance from car to car is a multiple of the distance from shoulder to shoulder on the drive chain. In order to insure a gradual pickup of the load and a proper distribution thereof, the front car is preferably provided with a washer 52 and a corresponding shorter spacer 39 as shown in Fig. 4. This construction displaces the sprag 38 toward the rear. The next driving car is provided with a thinner washer 53 and a corresponding shorter spacer 39 as shown in Figs. 7 and 8. The third driving car (not shown) does not have any washer corresponding to 52 or 53. The result is that the front car picks up the load first, the load coming on the second car only after the spring 40 of the first car has been compressed. The load comes on the third car only after the springs of the first and second cars have been compressed. This construction not only insures the gradual picking up of the load, but in case of any inaccuracy of construction of the cars or of the chain it insures that at least a part of the load will be taken by the front car.

In Figs. 9 and 10 I have shown a construction which is somewhat different from that shown in the other views, the guide rail 26 and the corresponding guide wheels being omitted. The main wheels 5^a and 6^a are flanged, and the car is thus guided by the engagement of these flanges with the inner faces of the main rails 25^a, 25^a. In order to provide a safety means to prevent the car from jumping the track, each of the two girders is provided with an inward projection 54 which is adapted to cooperate with downward projecting hooks 55, 55, secured to the car chassis.

What I claim is:

1. In a coaster car chassis, the combination of a two-part frame, and a central longitudinal bar rigidly connected to one part and serving as a pivot member for the other part.

2. In a coaster car, the combination of two frame sections each comprising transverse structural members having aligned central apertures therein, bearing blocks secured to the said members and having apertures therein registering with the first said apertures, a connecting and pivot bar extending through all of the apertures in both sections, and means for preventing longitudinal movement of the sections with respect to the bar.

3. In a coaster car, the combination of two frame sections each comprising transverse members having aligned central apertures therein, a connecting and pivot bar extending through the apertures in both sections, means for preventing longitudinal movement of the sections with respect to the bar, and a combined spacing and bearing member surrounding the bar and located between the two sections.

4. In a coaster car chassis, the combination of a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, and a car-driving device carried by the said bar and adapted to be engaged by a driving chain.

5. In a coaster car chassis, the combination of a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, a collar slidable on the bar, a dog on the collar adapted to be

engaged by a driving chain to drive the car, and a spring for resisting forward movement of the collar along the bar.

6. In a coaster car chassis, the combination of a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, a collar slidable on the bar, a dog on the collar adapted to be engaged by a driving chain to drive the car, and a coil spring surrounding the rod and engaging the collar to resist relative movement thereof along the rod.

7. In a coaster car, the combination of two frame sections each comprising transverse members having aligned central apertures therein, a connecting and pivot bar extending through the apertures in both sections, means for preventing longitudinal movement of the sections with respect to the bar, a slidable collar on the rod between two transverse members, a dog on the collar adapted to be engaged by a driving chain to drive the car, a spacing sleeve on the rod behind the collar and between it and the next transverse member, and a coil spring surrounding the rod in advance of the collar and located between it and the next forward transverse member.

8. In a coaster car chassis, the combination of a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, and devices at the ends of the connecting bar for coupling the car to other similar cars.

9. In a coaster car chassis, the combination of a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, a car-driving device carried by the said bar and adapted to be engaged by a driving chain, and devices at the ends of the connecting bar for coupling the car to other similar cars.

10. A train of connected coaster cars, each comprising a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, and car-driving devices carried by the connecting bars of alternate cars and adapted to be engaged by a driving chain.

11. A train of connected coaster cars, each comprising a two-part frame, a central connecting bar extending longitudinally of both parts and serving as a pivot member for relative angular movement of the parts, collars slidable on the respective bars of some of the cars, dogs on the respective collars adapted to be engaged by a driving chain to drive the train, and springs for resisting the forward movements of the respective collars along the bars.

WILLIAM H. STRICKLER.