

Dec. 19, 1933.

H. G. TRAVER

1,940,233

AMUSEMENT RIDE

Filed May 14, 1929

4 Sheets-Sheet 1

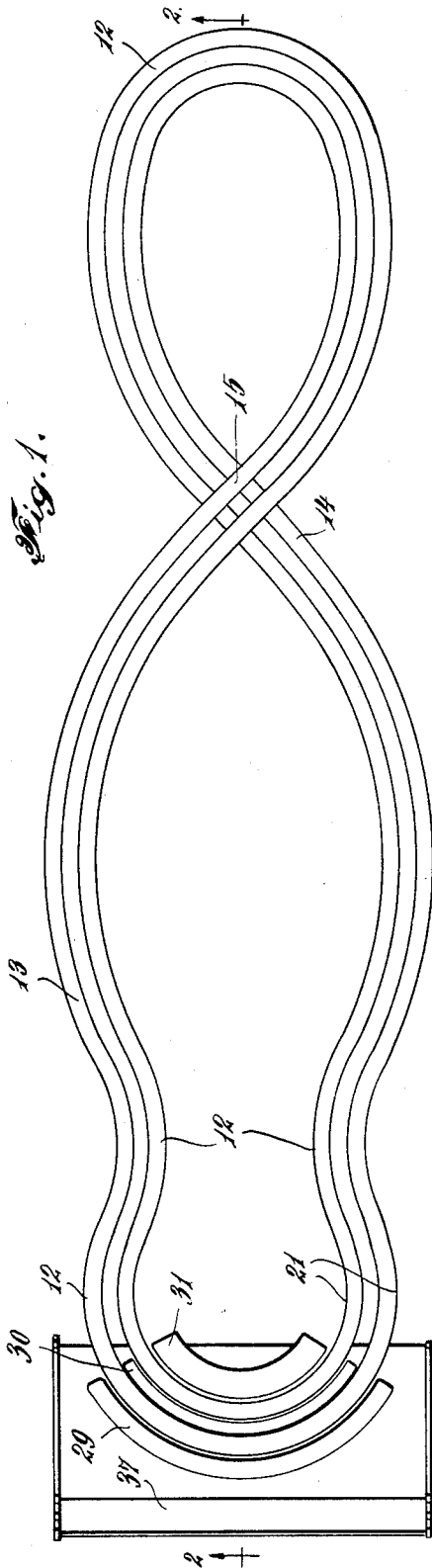


Fig. 1.

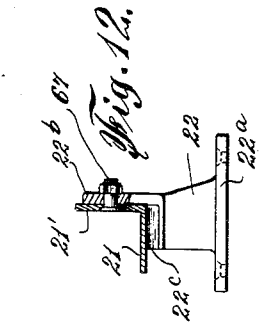


Fig. 12.

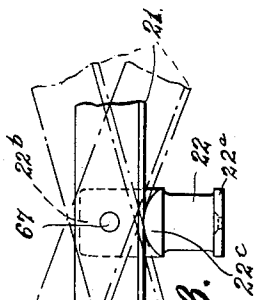
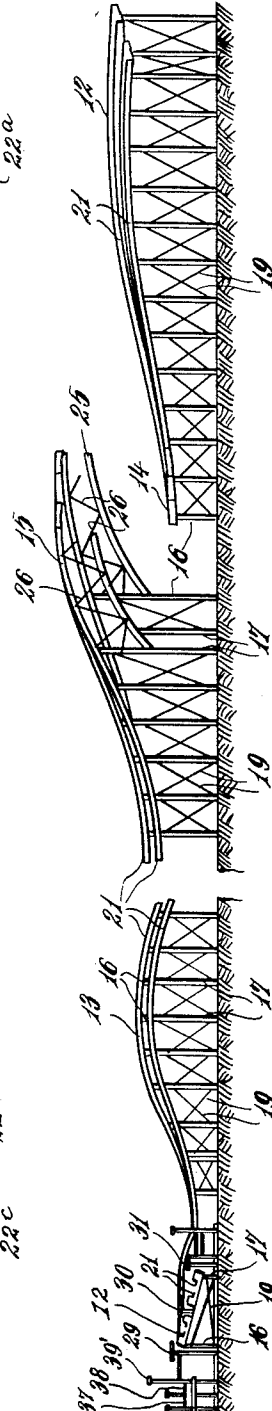


Fig. 13.

Fig. 2.



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4 Sheets-Sheet 2

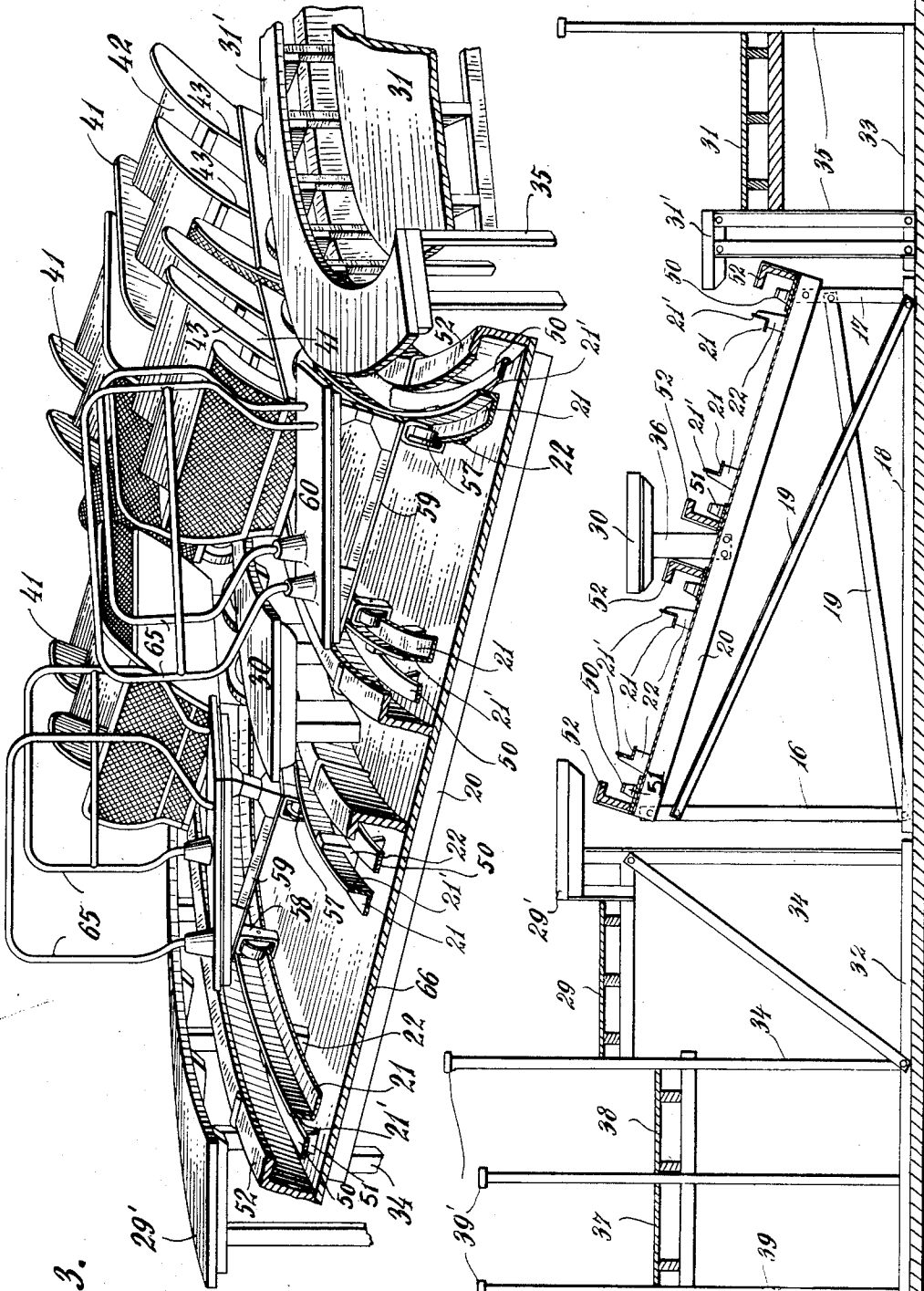


Fig. 3.

Fig. 4.

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AMUSEMENT RIDE

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4 Sheets-Sheet 3

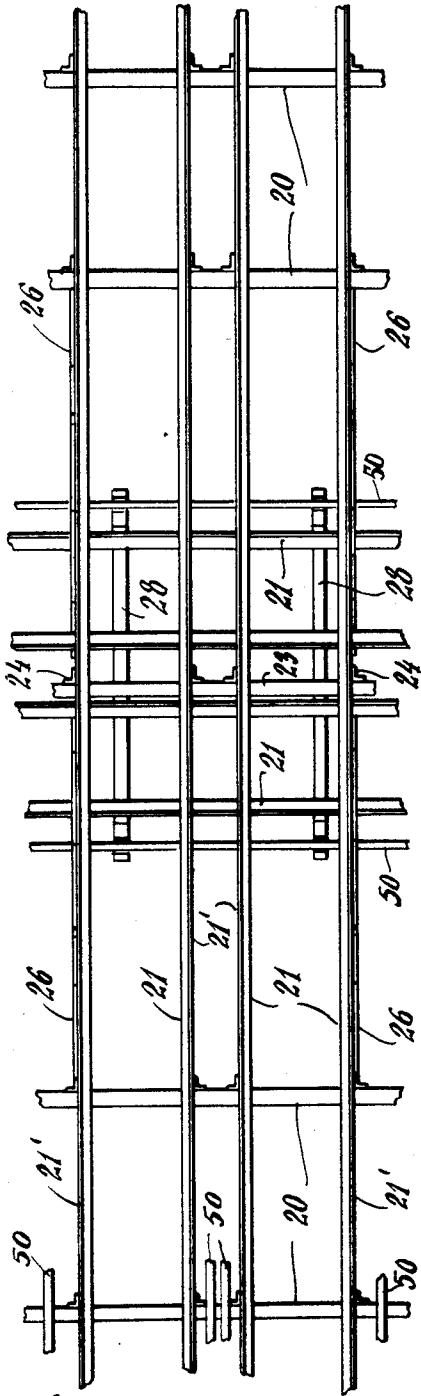


Fig. 5.

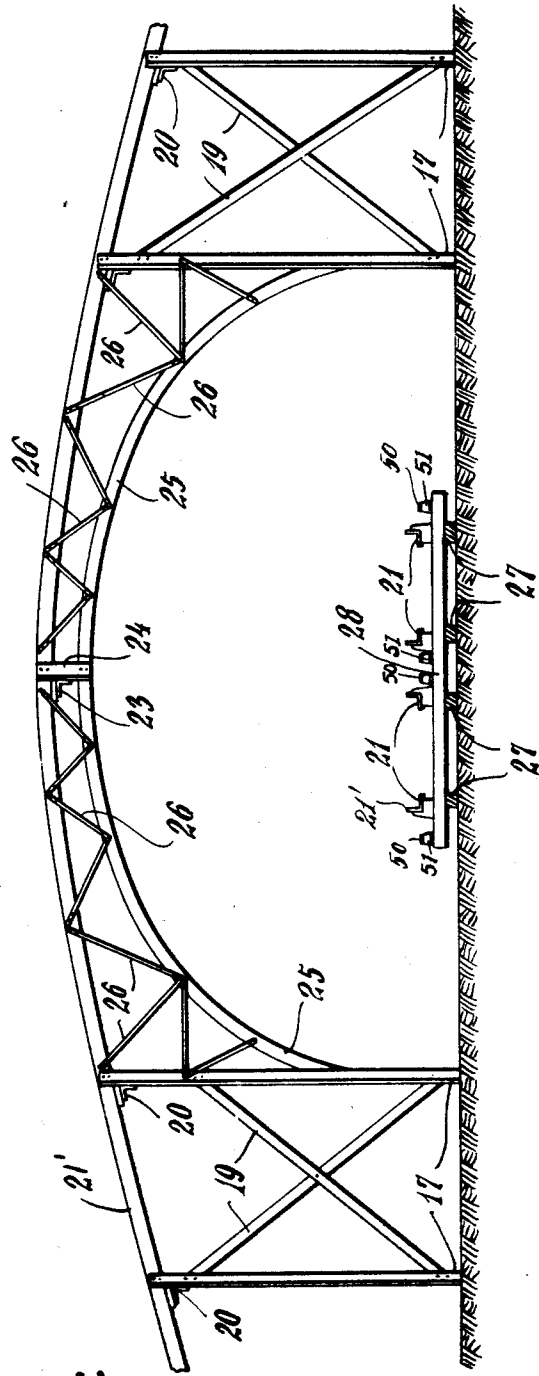


Fig. 6.

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AMUSEMENT RIDE

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4 Sheets-Sheet 4

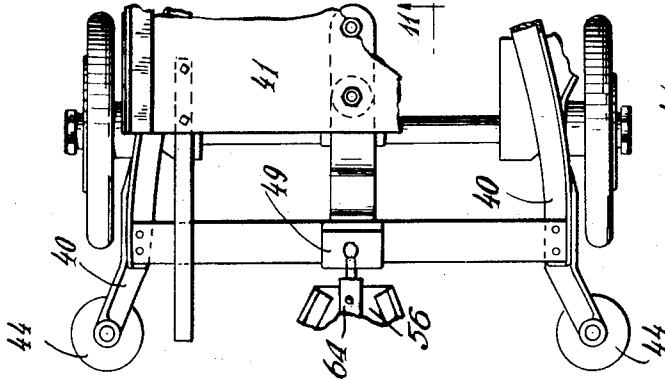


Fig. 10.

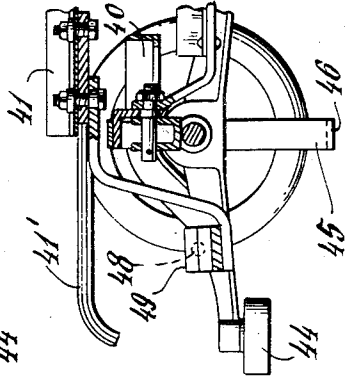


Fig. 11.

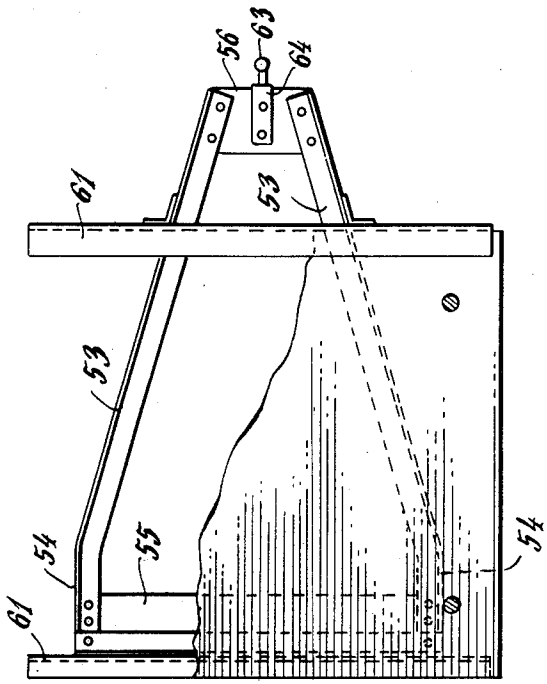


Fig. 8.

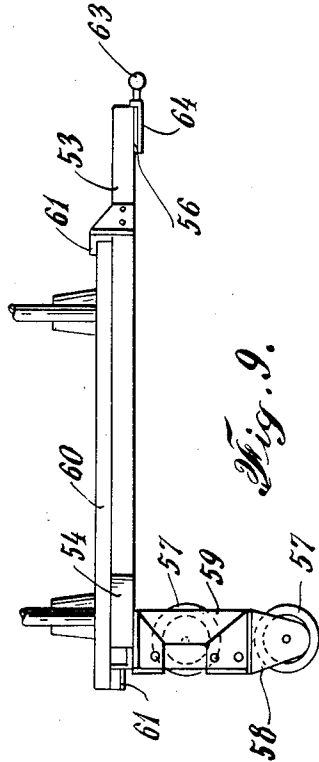


Fig. 9.

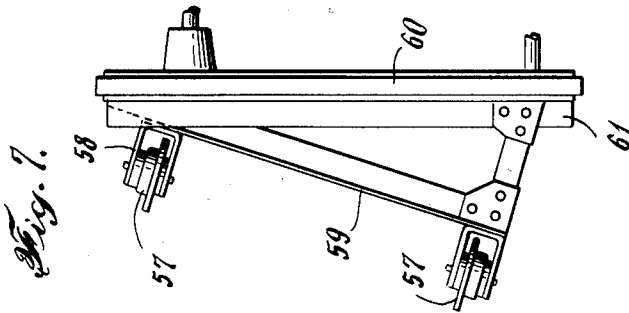


Fig. 7.

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UNITED STATES PATENT OFFICE

1,940,233

AMUSEMENT RIDE

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Application May 14, 1929. Serial No. 362,936

5 Claims. (Cl. 104-63)

This invention relates to amusement rides, and it is an object of the invention to provide a novel arrangement of the track structure embodying parallel serpentine tracks having banked curves, uptrack, declivous and level sections of a maximum length within a minimum amount of space.

It is another object of the invention to provide an amusement ride employing self-propelled and self-guided trains of passenger cars which is intermediate a flat amusement ride and a high coaster ride and embodying all the thrill imparting features of the latter.

It is another object of the invention to provide a parallel track structure arranged with banked curves, uptrack, declivous, and level sections and a train of passenger cars operated on separate tracks and enabling the injecting of the feature and thrill of contending in a race between trains on the different tracks.

It is a further object of the invention to provide fixed platforms relative to the tracks of a parallel track structure to serve as a loading and unloading station with one of the platforms arranged with approaches for the entrance and exit of patrons of the trains of passenger cars, and to provide platforms to travel with the cars to permit crossing of the tracks from one fixed platform to another.

A still further object of the invention is to provide a track structure embodying a pair of parallel tracks arranged with an arched section to span a low and level track section to take up a minimum amount of ground space.

A further object of the invention is to provide in an amusement railway of this character a track structure which is novel, safe for cars propelled thereon, inexpensive to construct and not difficult to assemble, and embodying the features of imparting thrills to passengers of cars propelled on the track of the larger and higher track structure types of coaster railways and without the hazards and dangers inherent thereto.

Other objects and advantages will hereinafter appear.

The embodiment of the invention illustrated comprises a supporting structure for a pair of parallel tracks arranged with banked curves, uptrack, declivous and level sections and an arch spanning a level or lower section, said supporting structure comprising two series of parallel uprights braced by struts connected to successive and opposite uprights, and supporting two pairs of traction rails by tie members supported between opposed uprights and extending on the

longitudinal axis thereof in an oblique direction toward the center of the curve at the curved portions of the track to effect a banking of the rails at the curves of the track structure. At the arch section of the structure the uprights approach a predetermined point from opposite sides thereof with the height of each successive upright increased toward said point and terminating in spaced relation to said point to form a passage for a level or lower section of the structure. The span of the arch is formed by the rails supported by the tie members supported between the uprights.

The level sections of the track structure comprise pairs of parallel extending sill members and supporting tie members extending transversely of the sill members to carry the track rails in spaced relation to said tie members and parallelly of the sill members. To utilize the track structure as an amusement ride a train of passenger cars is tractionally supported on each pair of track rails and carry rollers to engage vertical portions of the rails to guide the trains along the same. Angle shaped members are provided to extend below the traction portion of the rails to prevent the cars jumping from the rails, and electric contact shoes may be provided to slidably engage electric conductor rails supported by and insulated from the tie members at the outer sides of the track rails for the transmission of electricity to electric motors carried by the cars to propel the trains along the track structure. To load and unload the trains, platforms extending parallelly of the track structure at a curved portion of the track structure are supported upon uprights similar to the rail supporting uprights, one at each side of the rail supporting uprights, and a platform is arranged intermediate the other two platforms and is supported by the tie members between the pairs of track rails with the platforms from the inner side of the tracks ascending in stepped relation to each other, and one of the platforms is arranged with approaches in the form of ramps for the entrance and exit of passengers. To permit crossing from the one platform over the intermediate platform and tracks to the other platform each train is arranged with a traveling platform having the platform portion thereof extending on the horizontal at the curve section of the track structure in stepped relation to the stationary platforms.

In the drawings accompanying and forming a part of this application, Figure 1 is a diagrammatic plan view of a track structure of an amusement ride embodying the present invention.

Figure 2 is an elevational view of sections of the track structure shown immediately above each section in Figure 1.

Figure 3 is a cross sectional view in perspective of the platform section of the track structure and showing trains of passenger cars in relation thereto, and the means to cross from one side of the platform to the other.

Figure 4 is an elevational view in cross-section of the section of the track structure illustrated in Figure 3.

Figure 5 is a plan view of an arched section spanning a level section of the track structure.

Figure 6 is an elevational view of the track structure looking at the bottom of Figure 5.

Figure 7 is an end elevation of a traveling platform.

Figure 8 is a plan view of the traveling platform with a part of the platform broken away.

Figure 9 is a side view of the traveling platform looking at the bottom of Figure 8.

Figure 10 is a plan view of a portion of a traveling platform and car and showing the coupling between the same;

Figure 11 is a sectional view taken on the line 11-11 of Figure 10 looking in the direction of the arrows; and

Figures 12 and 13 are end and side elevational views of a track rail mounting saddle.

Like characters of reference designate like parts throughout the specification and drawings.

In carrying out the invention there is provided a track structure arranged with banked curved sections 12, uptrack and declivous sections 13, level sections 14, and an arch 15, as illustrated in Figures 1 and 2, which comprises parallel series of uprights 16, 17, of angle steel, arranged in pairs, supported upon the ground or other suitable foundation by sills 18 extending transversely of the uprights, and braced from the sills and from each other by angle steel struts 19 fixed at the ends to the one upright and sill, and the opposed uprights of the successive pairs of uprights in the different series also being braced by strut bars 19.

To tractionally support passenger carrying cars upon said uprights, tie members or ledger plates 20 of angle steel are supported between the opposed uprights to support two pairs of traction wheel supporting rails of angle shape in cross section, one angle portion constituting the tread 21 of the rail extending parallelly of the tie members, and a portion 21' extending at a right angle and vertically to the tread portion. The rails are supported in spaced relation to the tie members by saddle members 22 fixed to and projecting from the tie members and embracing the angle portions of the rails, with the marginal sides of the tread portions extending beyond the saddle members and the open angle portions of the rails of each pair of rails opposed to each other.

At the banked curved sections of the track structure each series of uprights are of different height, depending upon the inflection of the curve, the sharper the curve the greater the inclination of the banking of the track. The inner series 17 relative to the center of the curve is of less height than the outer series 16, and the tie members are supported by and at the upper ends of the uprights so that the tie members will extend with the longitudinal axes thereof in an oblique direction toward the center of the curve with the tread portions of the rails extending in the same direction, as shown in Figure 4.

At the uptrack and declivous sections of the track structure the opposed uprights of both

series approach a predetermined point from opposite sides thereof, increasing in height toward said point, as shown by the section at the left hand end of Figure 2. In most instances, as illustrated, the curved sections precede or follow the uptrack and declivous sections, imparting a gliding effect to the travel of the passenger cars, thereby augmenting the novelty and thrill of the ride.

At the arched section of the track structure the uprights are arranged similar to the uprights in the declivous sections and are spaced to form a passage as shown in Figure 6. The rails 21, 21' are continued to span the passage and are supported by the tie members 20 secured to the terminating uprights of the passage and to a tie member 23 supported, as at 24, between arched members 25, the latter being fixed at the ends to the terminating uprights and from which members the spanning rails 21, 21' are supported by trusses 26, similar trusses also supporting the ends of the arched members to the terminating uprights.

In the level sections of the track structure there are provided pairs of parallel extending sills 27, two pairs in the present instance, supporting tie members 28 extending transversely of the sills, and adapted to carry the track rails 21, 21' by the saddle members 22 mounted on the tie members in the manner hereinbefore described.

The track structure is constructed to tractionally support two trains of universally connected passenger carrying cars. Each train is supported on a separate pair of rails 21, 21' and each car of the trains is of the type disclosed in Patent No. 1,840,988, issued to me January 12, 1932, and embodies a four traction wheel supported truck 40 adapted to permit each pair of wheels to have universal movement relative to each other to maintain an even traction of all wheels on the rails at the curved sections at high speeds and to impart a gliding effect to the cars during the travel thereof about the curved sections of the track structure, and a car body 41 is flexibly suspended from the truck 40 by springs 41' and arranged with seats 42 between the sides of the body with openings 43 through one side of the body relative to each seat for ready entrance to and exit from the cars. Each car truck is arranged adjacent each wheel with a pair of rollers 44 rotatable about vertical axes, one roller projecting forwardly and one rearwardly of the traction wheels with the peripheries thereof extending beyond the outer side of said wheels to engage the angle portion 21' of the rails to guide the cars along and maintain the same on the respective pairs of rails. The distance between the outer peripheries of the rollers adjacent opposed wheels is slightly less than the distance between the vertical portions 21' of the track rails so as not to retard the travel of the trains.

To prevent the cars from jumping or leaving the track rails safety shoes 45 are fixed to and extended downwardly from the car and have angle projections 46, as shown in Figure 11, to extend below the traction portions 21 of the rails and engage the same when the wheels leave the rails in a vertical direction, thus preventing accident.

The cars are coupled to have universal movement one relative to the other by any suitable means, such as a link pivotally connected at the opposite ends to the adjoining cars, as disclosed in my Letters Patent No. 1,840,988, issued January 12th, 1932, to permit independent move-

ment of each car on axes longitudinally and transversely of each car, and on a vertical axis.

To prevent passengers from falling from and standing up in the cars during the travel thereof each seat may be provided with a safety lap rail as disclosed by U. S. Patent #1,597,491 issued to me August 24, 1926.

The trains are propelled by electric motors (not shown) mounted on each car truck 40 and operatively connected to the axles of the rear wheels as shown in my Patent No. 1,840,988, issued January 12, 1932. Electric current is transmitted to the motors through electric conductor rails 50 insulated from and mounted on the tie members 20 at the outer sides of each of the track rails 21, 21' supported by insulator blocks 51 fixed to the tie members and shielded by a sheathing 52 of angle shape fixed on the tie members with one leg overhanging the conductor rail 50, as shown in Figure 3.

Means, not shown, are provided to separately control the speed of each train by connecting the conductor rails 50 in separate circuits having separate control devices connected therein operative to regulate the operation of the motors and thereby the speed of the trains, which in actual operation is varied to vary the speed of one train relative to the other and impart a racing effect between the two trains during the travel thereof about the track structure.

To load and unload passengers from the cars of the trains a station is arranged relative to the tracks, in the present instance at a curved section, comprising parallel platforms 29 and 31 supported at the sides of the track supporting uprights 16, 17 by uprights 34, 35 resting on sills 32, 33, respectively, with the platform 31 extending in a lower plane than platform 29 said platforms having raised portions 29', 31' terminating respectively adjacent the opposite outer sides of the cars of the trains and immediately below the car openings 43, which raised portions permit of easy entrance to and exit from the cars and serve as steps to the lower levels and platforms proper 29, 31. Access is had to the platform 29 from a point exterior of the track structure by ramps, as indicated at 37, 38 in Figure 4, ascending from the ground to the platform and supported by the uprights 34 and additional uprights 39 with the upper ends thereof extended and supporting hand rails 39'.

To provide a passage between the platforms 29 and 31 and to permit the loading and unloading of the train on the inner track adjacent the platform 31 by way of the ramps 37, 38, each train embodies what is herein termed a "traveling" platform or platforms coupled to an end of the train, shown as the front end. These traveling platforms constitute cross-overs or bridges from the platform 31, 31' to a platform 30 intermediate the tracks, and from the latter to the platform 29, 29'. The traveling platforms each comprise a platform 60 secured to sills 61 whereby it is secured to a frame member embodying sills having converging portions 53 and parallel portions 54 at the diverging ends thereof with the free ends connected by cross-pieces 55, 56. The frame is tractionally supported by flanged wheels 57 to engage the traction portion 21 of the rails with the flange abutting the outer edge thereof and rotatably carried in U-members 58 fixed to a right angular shaped truck member 59, one leg of which is longer than the other leg, said truck member being fixed at the ends of the legs to the bottom of the platform frame with the longer leg

extending obliquely and transversely of the frame, as shown in Figure 7.

The traveling platforms are coupled and supported at the converging end of the sill portions 53 with the front car of each train to permit of universal movement of the platform relative to the cars. For this purpose there is provided a coupling member or bracket 64 having a ball or spherical head 63 at one end and the opposite end portion being flattened whereby it is fixed upon the cross bar 56 connecting the converging ends of the sills 53. To connect the coupling members with the car there is mounted on a cross bar of the car blocks 49 having a spherical seat therein similar to the link connection between the cars, and in the spherical seat of which blocks the spherical end 63 of the coupling member is pivotally engaged.

To prevent the traveling platforms leaving the rails the inner legs of the U-member 58 carry members similar to the safety shoe 45 to extend below the traction portions 21 of the rails to engage the same when the wheels tend to leave the track. As the trains are stopped relative to the platforms 29, 30 and 31 the platform portions 60 of the traveling platforms will be in a horizontal plane and in stepped relation to said platforms, as shown in Figure 3. To facilitate crossing over the platform portions 60 hand rails 65 are fixed to the platforms at each end to extend upward and transversely thereof with the hand rails of the traveling platform connected with the train on the inner track having the ends adjacent to the platform 30 overhang the same to form a continuous guiding and enclosing structure. To prevent any serious effect from an accidental fall from the platforms 29, 30 and 31 to the space between the tie members said portion of the track structure is closed by a covering 66 such as boards. The angle form of truck member 59 of the traveling platforms is only required when the station is arranged at a curved section of the tracks as this is the only time when the axis extending transversely of the longitudinal axis of the train is oblique to the horizontal.

The saddle members 22 comprise a body portion with a base 22^a to abut the upper surface of a tie member and adapted to be fastened thereto, and the upper section of the body portion having a perforated vertical extension 22^b, for the adjustable mounting of the rail portion 21', as at 67, and a horizontal portion 22^c of arcuate formation, as shown in Figure 13, at the top of the body portion 22 for supporting the rail at the tread portion 21 to declivously position the rails 21, 21' at any desired angle.

It will be obvious that various changes may be made in construction and arrangement of parts, and that portions of the invention may be used without others, without departing from the scope of the invention.

Having thus described my invention I claim:

1. In an amusement ride, a track structure, a train of connected passenger cars to travel upon the track, and a platform connected to the car train, comprising a supporting frame, traction wheels supporting said frame at one end on the track, and means fixed to the opposite end of the platform frame having a universal pivotal connection with an end car of the train to support and connect said end of the platform with the car train, the platforms permitting the passengers to cross from one side to the opposite side of the track structure when the train is at rest.

2. In an amusement ride, a track structure, a

<p>train of connected passenger cars to travel upon the track, and a platform connected to the car train to permit the passengers to cross from one side to the opposite side of the track structure</p> <p>5 when the train is at rest, comprising a frame portion arranged with side sills diverging toward one end, a traction wheel carrying truck member fixed at the diverging end of the frame, a platform mounted on the sills, and means fixed to</p> <p>10 the converging end of the frame in line with the longitudinal axis of the platform and having a ball and socket connection with the end car of the train to support and connect said end of the platform with the car train.</p> <p>15 3. In an amusement ride, a track structure, a train of connected passenger cars to travel upon the track, and a platform connected to the car train to permit the passengers to cross from one side to the opposite side of the track structure</p> <p>20 when the train is at rest, comprising a platform supported at one end upon the track by a truck carrying a pair of traction wheels with the axes of rotation of the wheels arranged at an angle to the plane of the platform and at the opposite</p> <p>25 end connected to and supported from an end car of the train, and hand rails at the opposite ends extending transversely of the platform.</p> <p>4. In an amusement railway, parallelly arranged tracks, platforms arranged at the outer</p> <p>30 sides of and intermediate the tracks, approaches</p>	<p>to a platform at the outer side of a track for the entrance and exit of passengers, cars to be propelled upon the tracks, and platforms connected to and propelled with the cars on the tracks for the passage of passengers from one platform at the outer side of one track to the intermediate platform and from the latter platform to the platform at the outer side of another track provided with the approaches.</p> <p>5. In an amusement railway, parallelly arranged tracks, fixed horizontal platforms arranged at a curved and inwardly banked section of the tracks and at the outer sides of and intermediate the tracks, and an outer platform arranged with approaches thereto for the entrance and exit of passengers, platforms supported by traction wheels upon the tracks and an end car of trains to travel with the trains upon the tracks, the axes of rotation of the traction supporting wheels of said traveling platforms extending at an angle to the plane of the platforms to adapt said platforms to extend in a horizontal plane with the cars of the trains at a curved and banked track section relative to the fixed platforms for the passage of passengers from one platform at the outer side of one track to the intermediate platform and from the intermediate platform to the other outer platform.</p>	<p>80</p> <p>85</p> <p>90</p> <p>95</p> <p>100</p> <p>HARRY G. TRAVER. 105</p>
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