F. A. DAHLIN & E. CARLSON.

AERIAL RAILWAY.

APPLICATION FILED DEC. 26, 1908.

935,780.

Patented Oct. 5, 1909.

5 SHEETS—SHEET 1.

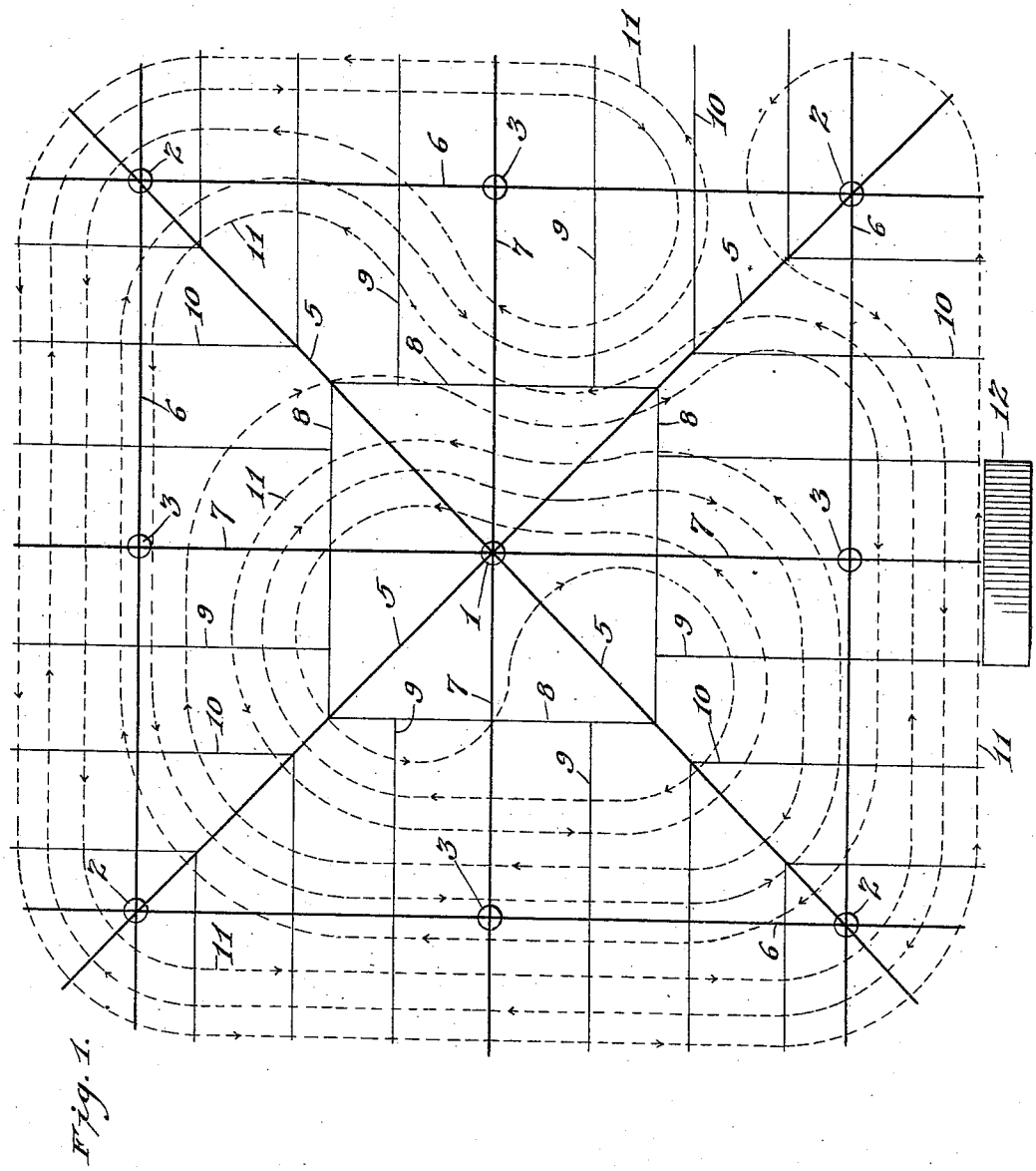

Fig. 1.

Witnesses

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Fig. 2.

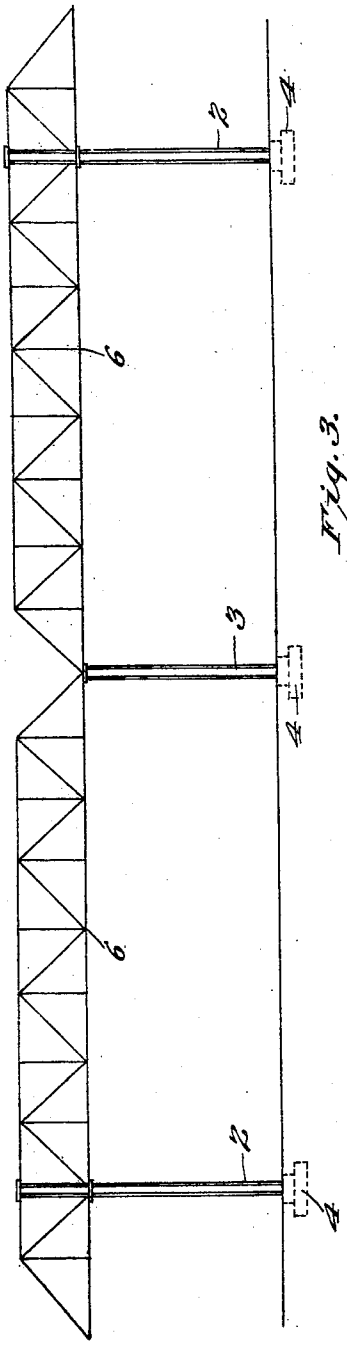
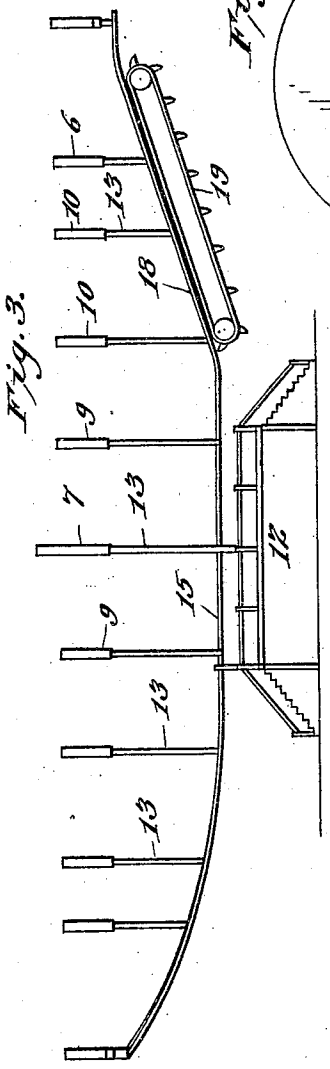


Fig. 3.



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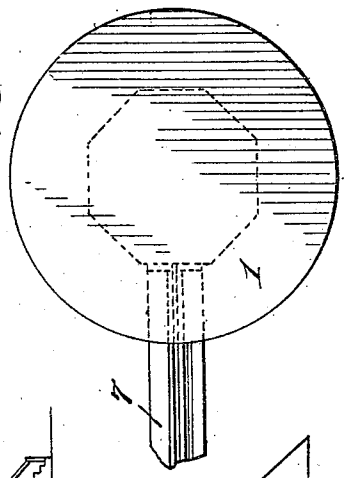

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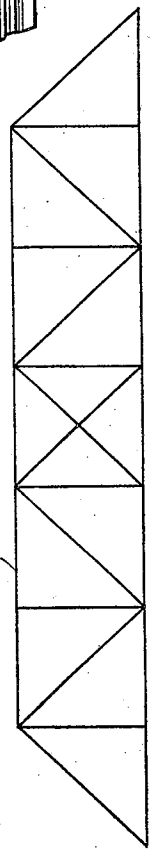

Witnesses

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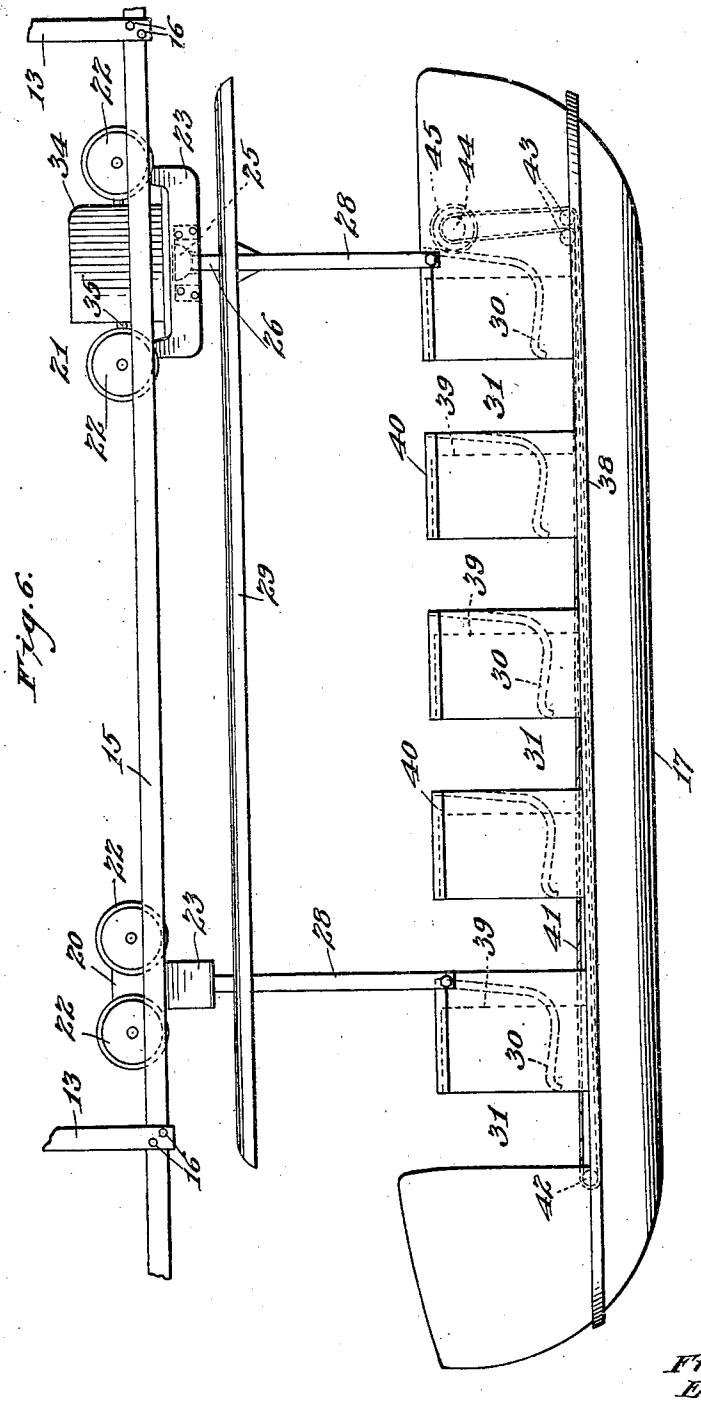

Fig. 6.

Witnesses

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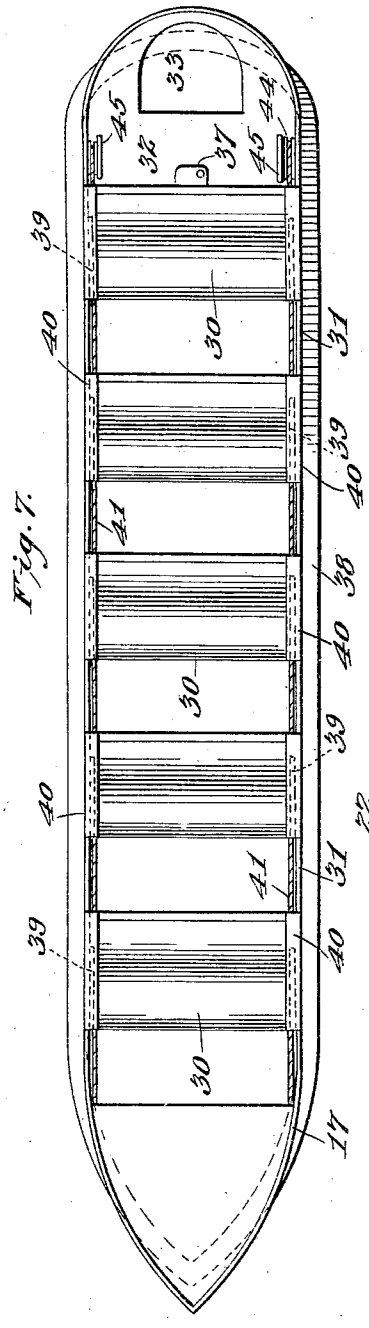

Fig. 7.

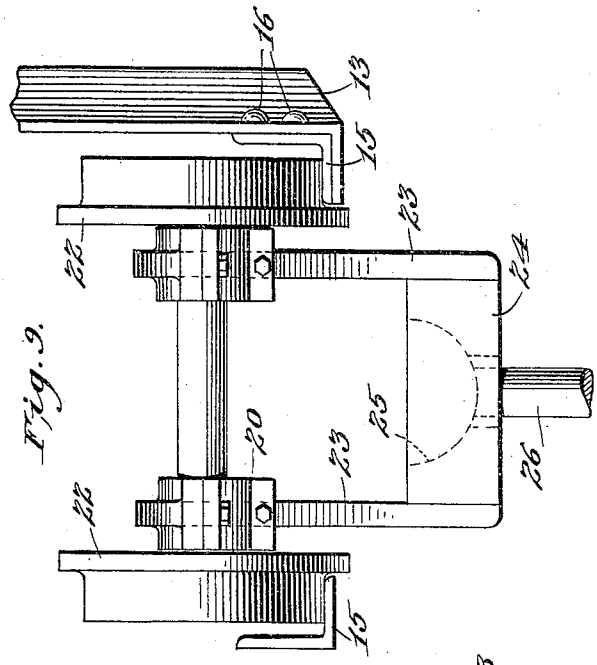

Fig. 9.

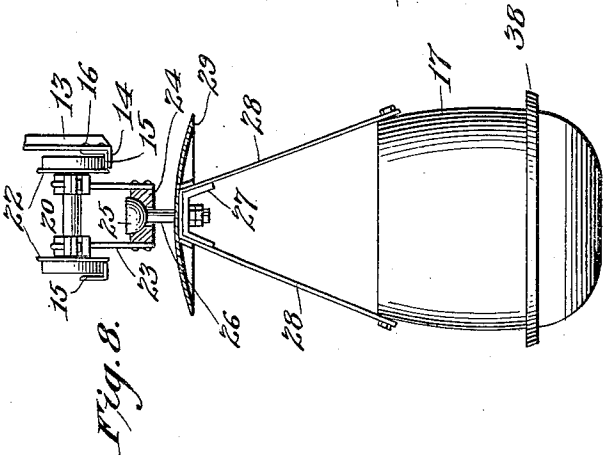

Fig. 8.

Witnesses

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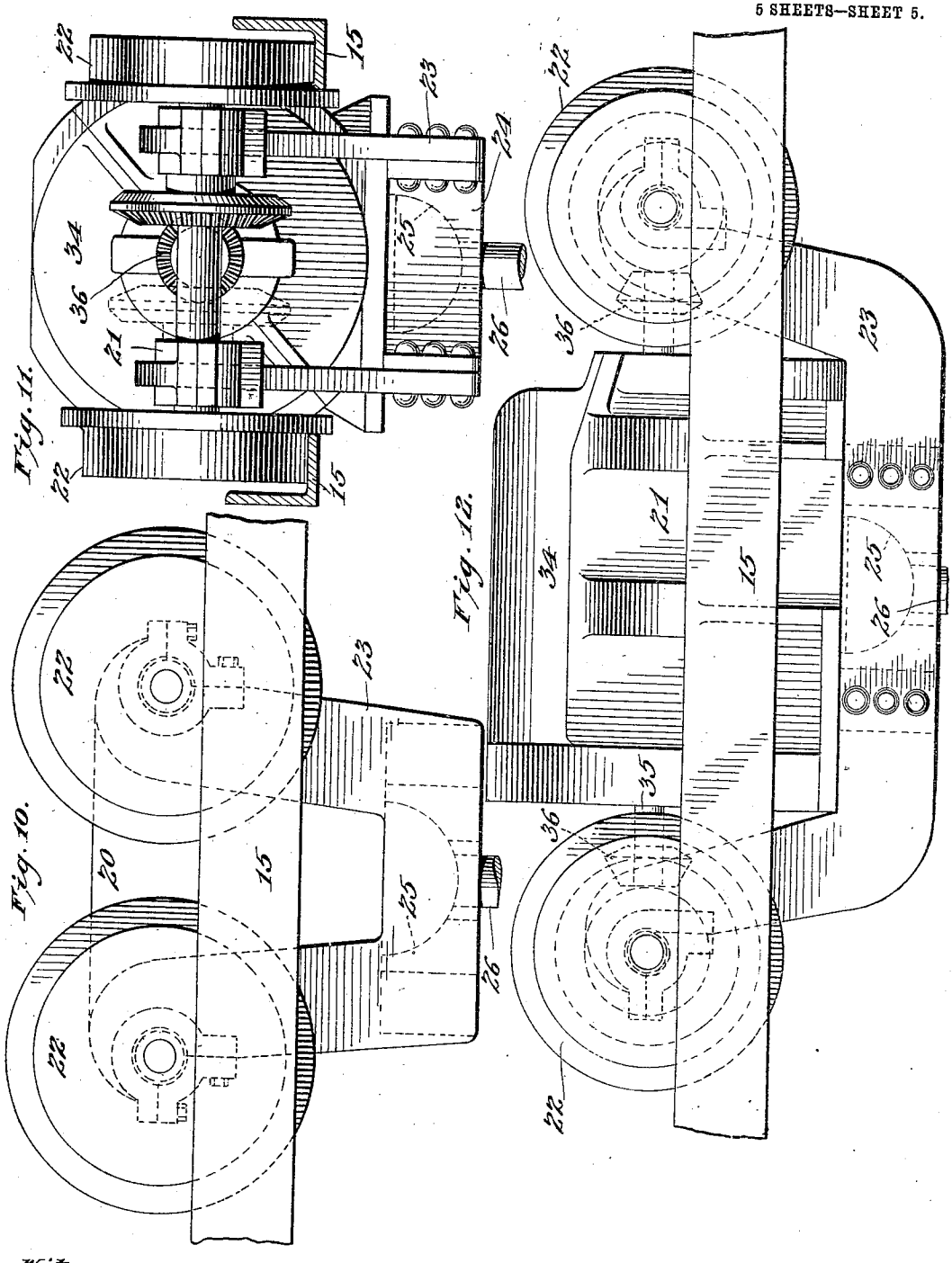

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UNITED STATES PATENT OFFICE.

FREY A. DAHLIN, OF CHICAGO, AND EMIL CARLSON, OF WAUKEGAN, ILLINOIS.

AERIAL RAILWAY.

935,780. Specification of Letters Patent. Patented Oct. 5, 1909.

Application filed December 26, 1908. Serial No. 469,272.

To all whom it may concern:

Be it known that we, FREY A. DAHLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, and EMIL CARLSON, a citizen of the United States, residing at Waukegan, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Aerial Railways, of which the following is a specification.

Our invention relates to improvements in aerial railways, and more particularly to improvements of this character designed for amusement purposes, an object of the invention being to provide an improved construction of supporting frame work for tracks, from which latter cars are suspended.

A further object is to provide a frame work of general rectangular form supported upon posts and having depending hangers, to which rails are secured, and constitute electric conductors.

A further object is to provide an improved endless track in a circuitous path, and provide a starting point to which the cars will return after moving throughout the entire path of the track.

A further object is to provide an improved arrangement of trussed girders and struts supported upon posts, and from which track hangers depend.

A further object is to provide an improved construction of car which is electrically propelled and suspended from trucks mounted upon the tracks.

A further object is to provide an improved construction of car suspended from trucks, and having ball and socket juncture with said trucks.

A further object is to provide an improved construction of car having a series of seats, entrances to the seats, doors to close said entrances, and improved means under the control of the motorman for operating the doors.

With these and other objects in view the invention consists in certain novel features of construction, and combinations, and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1, is a diagrammatic plan view illustrating our improved railway structure. Fig. 2, is a view in side elevation illustrating the main girder mounting. Fig. 3, is a view in elevation illustrating the point of entrance and exit from the car. Fig. 4, is a detail view of one of the struts. Fig. 5, is an enlarged end view of one of the supporting posts. Fig. 6, is a view in side elevation illustrating our improved car. Fig. 7, is a top plan view of the car. Fig. 8, is a view in end elevation of the car. Figs. 9 and 10, are views in elevation taken at right angles to each other illustrating the front car-supporting truck. Figs. 11 and 12, are views similar to Figs. 9 and 10, of the rear trucks.

1 represents a center post, 2 corner posts located an equal distance from the center post, and 3 intermediate posts, located halfway between the corner posts and in line with the corner and center posts. These posts are preferably hollow, and are made very strong and supported upon a masonry foundation 4, so as to withstand all necessary weight and strain incident to the operation of a railway of this kind. Four long trussed girders 5 are supported at their inner ends on center post 1, extend diagonally therefrom, and are supported near their outer ends on corner posts 2, the outer ends of the girders 5 overhanging as clearly shown. Side girders 6 of the same form as girders 5, but of shorter length, are supported at one end on the intermediate posts 3, and at their outer ends project across the corner posts leaving overhanging portions as shown clearly in Figs. 1 and 2. Girders 7 are supported at their inner ends on posts 1 and project across the intermediate posts 3 providing overhanging portions as clearly shown in Fig. 1. These trussed girders 5, 6 and 7 together with posts 1, 2 and 3 constitute the sole supporting means for the entire weight of the railway structure, as will more fully hereinafter appear. To the girders 5, and at a point equi-distant from the center post 1 and the intermediate posts 3, trussed struts 8 are secured at their ends to girders 5 and cross girders 7, and constitute a rectangular or square frame as clearly shown in Fig. 1. Similar trussed struts 9 are supported at their inner ends on the struts 8, and project over, and are supported upon, the girders 6, and struts 10 are supported on the girders 5 and 6, and these struts 9 and 10, constitute a series of parallel supporting beams to support the track as will more fully hereinafter appear.

The dotted line 11 in Fig. 1, indicates the center line of our improved endless track,

and 12 indicates a platform which serves as a starting and stopping point for the cars moving in the direction of the arrows, and returning to the platform 12.

Hangers 13 depend from the girders and struts, and are made with lugs 14 at their lower ends, projecting at right angles to the hangers, and angle rails 15 are secured upon these lugs 14 and against the hangers 13 by means of rivets 16. These rails 15 constitute electric conductors. The hangers 13 at one side of the elevated structure, adjacent to the platform 12, are of varying lengths, so as to permit the rails to bend downward to a lower level, to locate the car 17 on a level with the platform and permit the ready entrance and exit of the passengers. The inclined portion 18 of the track, up which the car must travel, is provided with an endless cable 19, driven by any suitable power, not shown, to assist the car up the incline to the normal track level, where it is propelled by electric means.

20 and 21 indicate the front and rear trucks, supporting the car 17. These trucks are each provided with four flanged wheels 22, to run upon the rails 15. Yokes 23 depend from the opposite sides of the truck frames, and blocks 24 are secured between the truck yokes, and said blocks are provided with openings registering with hemispherical recesses in the upper portions of the blocks. Hemispherical enlargements 25 on the upper ends of hangers 26, which latter project through the openings in the blocks 24, are located in the hemispherical recesses in the blocks 24 and provide a ball and socket joint for the hangers 26. The hangers 26 support angle brackets 27, and bars or links 28 are secured at their upper ends to these brackets 27, and at their lower ends to the sides of the car body 17, to support the car suspended from the trucks. A cover or canopy 29 is secured upon the brackets 27 and is located above the car body 17, so as to protect the occupants of the car from grease which might fall from the tracks, and also shade the car from the rays of the sun. The car body 17 is in the form of an open boat having a series of seats 30 disposed one behind the other, and entrances and exits 31 are provided in both sides of the car between the seats to permit the entrance and exit of the passengers.

The rear end of the car is divided off by a partition 32 to provide a compartment for the motorman, and a seat 33 is provided in the compartment for his accommodation. The rear truck, supports an electric motor 34, which drives a shaft 35 and bevel gears 36 connect this shaft with the shafts of the truck, so that the motor can propel the wheels along the track, as will be readily understood. An electric controller 37 is located in the motorman's compartment, and is connected with the motor 34 by any approved means not shown, so that the motorman can have the motor under absolute control at all times.

A channel bar 38 extends entirely around the car 17 and forms a part of the car wall or casing, which latter is preferably composed of sheet metal. This channel bar 38 constitutes a groove in which the flanged lower ends of doors 39 are mounted to slide, the flanged upper ends of the doors moving in suitable grooved enlargements 40 at the upper edge of the car body. At both sides of the car, endless cables 41 are mounted in the grooved or channel bars 38, and turn about pulleys 42 near the front end of the car. These cables pass over pulleys 43 and around pulleys 44, the latter turned by hand wheels 45 located within the motorman's compartment and in convenient reach. All of the doors 39 on one side of the car are secured to the cable 41 on that side of the car, so that by turning the hand wheel 45 on that side of the car, all of that series of doors can be simultaneously opened and closed by the motorman. It will thus be observed that the motorman can operate the doors at one side of the car without operating the doors at the other side of the car, and in fact, in a construction of railway as above described, it will be rarely, if ever, necessary to open the doors on but one side of the car, as the passengers will enter and leave from the same side of the car.

In operation, the passengers for the car will assemble upon platform 12, and the car 17 will come down the inclined portion of the track, and be stopped by the motorman at the platform, which latter will be on the level with the bottom of the entrances in the sides of the car. The passengers will then occupy the several seats in the car and the motorman will turn the hand wheel 45 to move cable 41 and close all of the doors 39. He then operates his controller 37 to start the motor 34 and move the car to the upwardly inclined portion 18 of the track, where the car will be engaged by the endless cable 19, and the latter will assist the car up to the normal level of the track, when the car can proceed throughout the several curvatures and path of the track as clearly shown in Fig. 1, back to the starting point. The passengers will then leave the car and new passengers will enter for a trip.

It is to be understood that as many cars may be used as desired, and a great many slight changes might be made in the general form and arrangement of parts described without departing from our invention, and hence we do not restrict ourselves to the precise details set forth, but consider ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of our invention.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. The combination with a center post, corner posts spaced equi-distant from the center post and intermediate posts located equi-distant between the corner posts and in line with the corner posts and center post, diagonal girders located upon the center and corner posts, girders connecting the corner posts and intermediate posts, girders connecting the center posts and intermediate posts, and rails supported on said girders.

2. The combination with a center post, corner posts located equi-distant from the center post, intermediate posts located equi-distant between the corner posts and in line with the corner posts and center post, diagonal girders connecting the center post and corner posts, girders connecting the corner posts and intermediate posts, girders connecting the center post and intermediate posts, hangers depending from said girders and tracks secured to said hangers.

3. The combination with a center post, corner posts located equi-distant from the center post, intermediate posts located equi-distant from the corner posts and in line with the corner posts and center post, girders connecting the center post with the corner posts, girders connecting the corner posts and intermediate posts, girders connecting the center post and intermediate posts, struts connecting the several girders, and tracks supported on said girders and struts.

4. The combination with a center post, corner posts located equi-distant from the center post, intermediate posts located equi-distant from the corner posts and in line with the corner posts and center post, girders connecting the center post with the corner posts, girders connecting the corner posts and intermediate posts, girders connecting the center post and intermediate posts, struts connecting the several girders, hangers depending from said girders and struts, and rails secured to the lower ends of said hangers.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FREY A. DAHLIN.
EMIL CARLSON.

Witnesses:
JOSHUA R. H. POTTS,
HELEN F. LILLIS.