No. 777,309. PATENTED DEC. 13, 1904.

D. M. RIDDLE & B. F. SHUCK.

PLEASURE RAILWAY.

APPLICATION FILED AUG. 22, 1904.

NO MODEL. 4 SHEETS—SHEET 1.

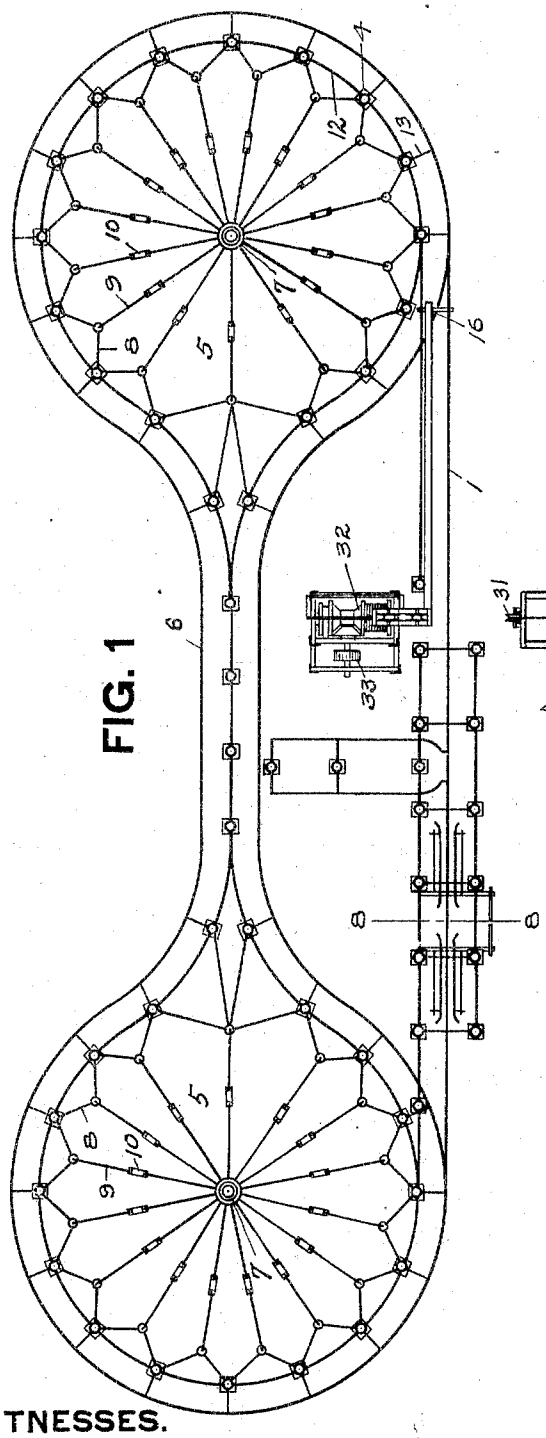

FIG. 1

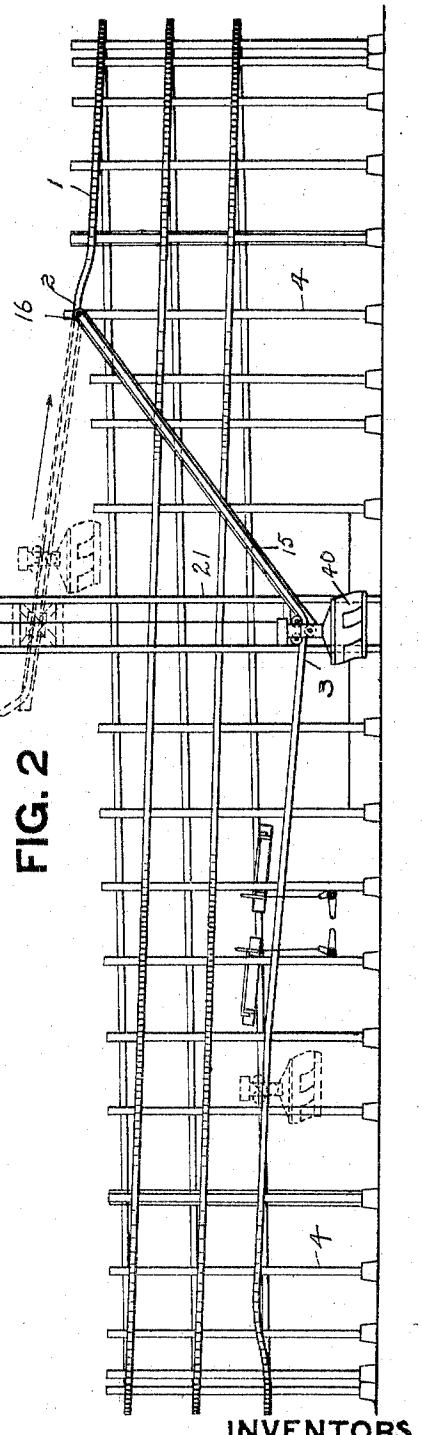

FIG. 2

WITNESSES.

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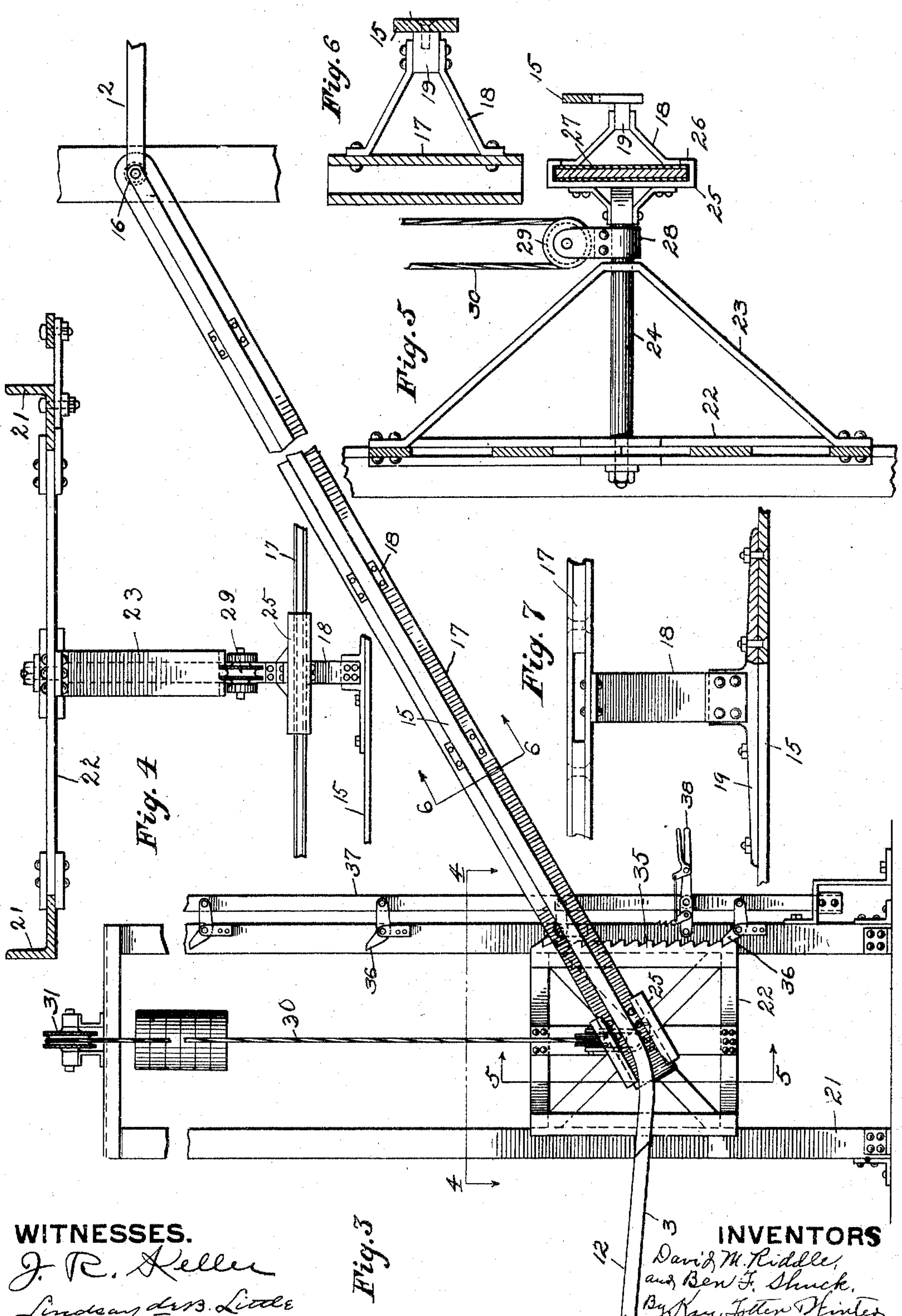
NO MODEL. 4 SHEETS—SHEET 2.



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NO MODEL. 4 SHEETS—SHEET 3.

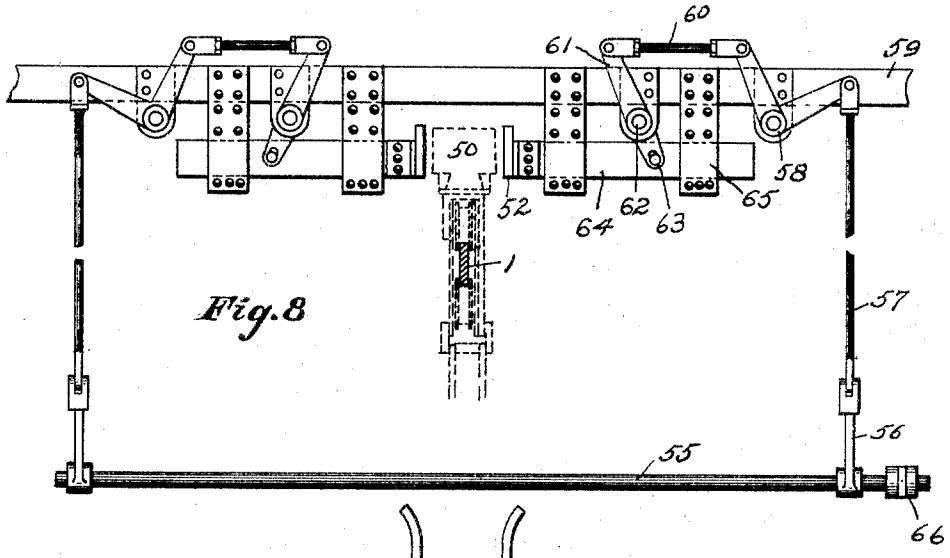

Fig. 8

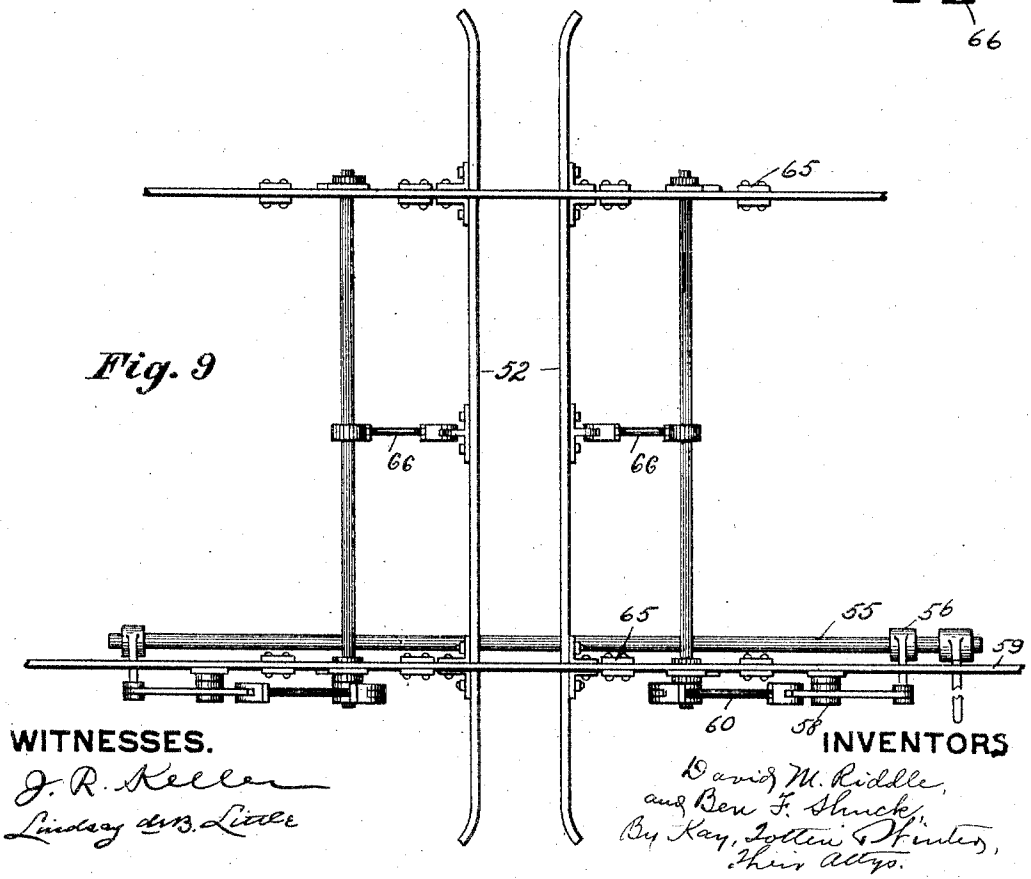

Fig. 9

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NO MODEL. 4 SHEETS—SHEET 4.

Fig. 10

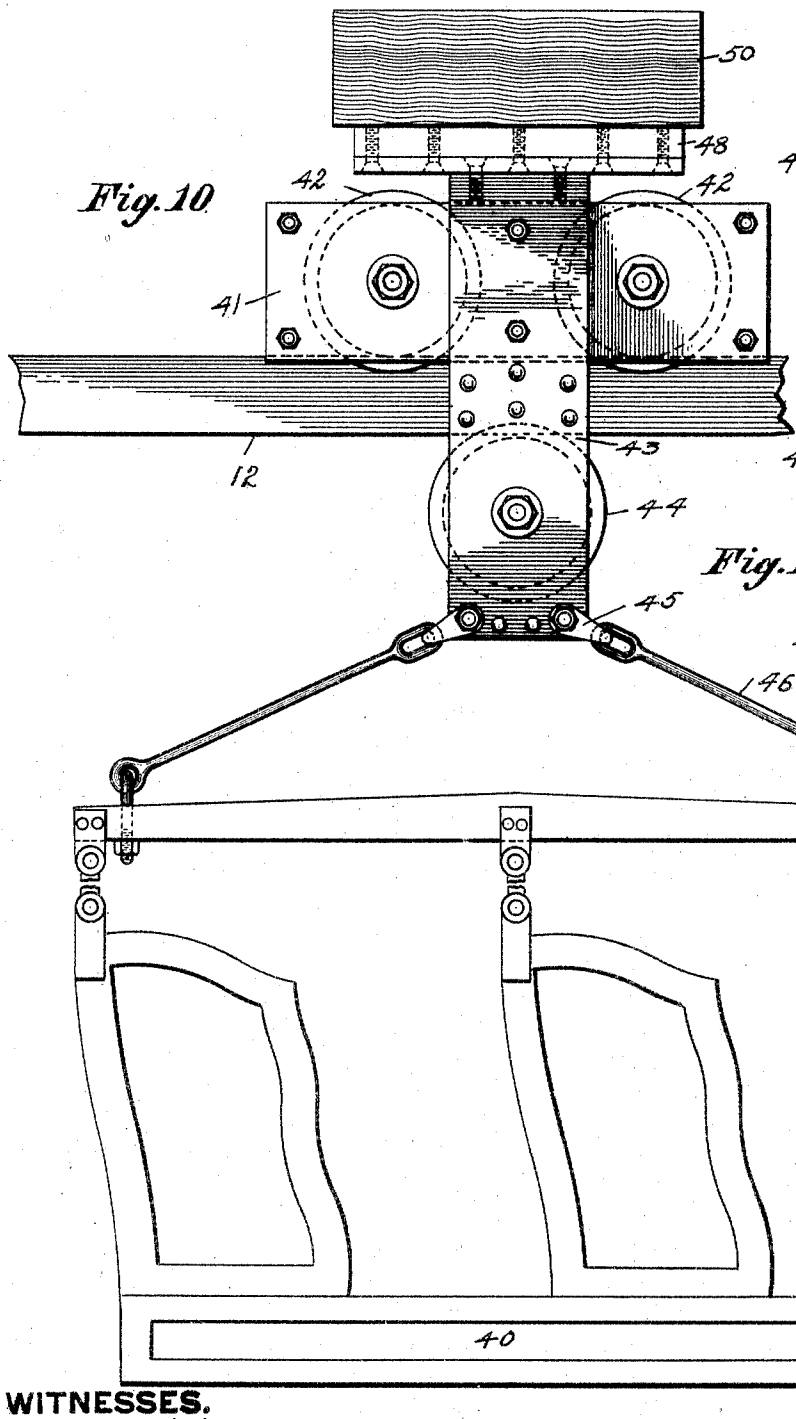
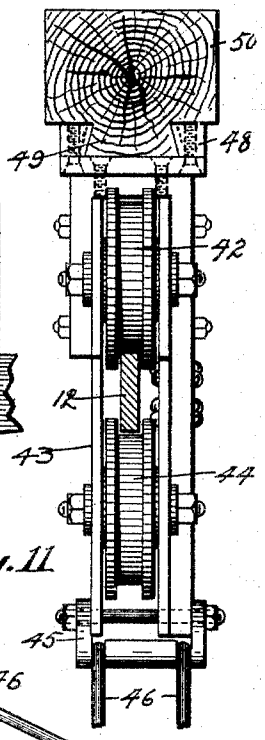


Fig. 11



WITNESSES.

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No. 777,309. Patented December 13, 1904.

UNITED STATES PATENT OFFICE.

DAVID M. RIDDLE AND BEN F. SHUCK, OF WILKINSBURG, PENNSYLVANIA.

PLEASURE-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 777,309, dated December 13, 1904.

Application filed August 22, 1904. Serial No. 221,656. (No model.)

To all whom it may concern:

Be it known that we, DAVID M. RIDDLE and BEN F. SHUCK, residents of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pleasure-Railways; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to pleasure-railways; and our object is to improve railways of this character in the particulars hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of our device. Fig. 2 is a side elevation of the same. Fig. 3 is an elevation, on an enlarged scale, of the elevating mechanism. Fig. 4 is a horizontal section on the line 4 4, Fig. 3. Fig. 5 is a vertical section on the line 5 5, Fig. 3. Fig. 6 is a vertical section on the line 6 6, Fig. 3. Fig. 7 is a plan view, partly in section, of a portion of the hinged track-section. Fig. 8 is an end elevation of the brake mechanism, being taken substantially on the line 8 8, Fig. 1. Fig. 9 is a plan view of the same. Fig. 10 is a side elevation of the car; and Fig. 11 is an end elevation of the trolley, the brake-block being in section.

Our pleasure-railway is composed of an endless track 1, inclined from an elevated point of beginning 2 to a lower point of termination 3, the track having a spiral arrangement with a plurality of spirals located one above the other. The track is supported upon suitable columns or pillars 4 and has the general shape shown in Fig. 1—that is, with substantially circular end portions 5, united by a neck or narrow portion 6. This form is chosen because greater strength of the supporting-frame can be secured. This is obtained by placing a column 7 substantially centrally in each of the circular end portions 5, to which central column the outer columns 4 are tied. Preferably the outer columns 4 are united in pairs by means of connecting members 8, and from each of these connecting members a guy-rod 9 extends to the central column 7, these guy-rods being provided with turnbuckles 10 for tightening the same. In this manner an extremely-rigid frame is provided at the two end portions. Each circular end portion is, in effect, a large circular skeleton column and is very rigid against stresses in all directions. The intermediate narrow portion or neck 6 receives a large portion of its support or rigidity from these circular end portions.

The track proper consists of a single rail 12, supported from the columns 4 by means of suitable brackets 13, and said track follows the contour of the framing except at the beginning and termination. As shown in Fig. 1, the elevated beginning and the lower termination extend practically tangentially from the opposite circular end portions running in a straight line instead of following the incurved course of the other track-sections. The space left by the incurving of the track-sections at the central narrow portion of the framing is a convenient place for the location of the elevator mechanisms, thus economizing in ground-space covered by the device.

The elevator mechanism consists of a track-section 15, which is hinged at its upper end, as at 16, at the elevated point of beginning of the continuous rail. The rail-section 15 is connected to a parallel bar or arm 17, which likewise is hinged at the point 16, and to which bar the elevator mechanism is connected. The lower end of the rail-section 15 is curved, as shown in Fig. 3, and coincides when depressed with the terminal section 3 of the continuous track. This rail-section 15 is connected to the arm 17 by means of brackets 18. (Shown in Figs. 6 and 7.) These brackets consist of a pair of arms riveted to the bar 17 and having secured between their opposite ends a casting 19, which is bolted or otherwise suitably secured to the rail-section 15.

The elevator consists of an upright frame built up of columns 21 and connecting members. Guided by two of the columns and movable vertically is a frame 22, which is provided with an outwardly-extending bracket 23. Rotatably mounted in this bracket and in the frame 22 is a shaft 24, carrying at its outer end a head 25, provided with bent ends 26, which fit over the edges of the bar 27, so that the latter can have a sliding movement

in said head. Also connected to the shaft 24 is a clip 28, carrying a sheave 29, around which passes the hoisting-cable 30. The latter passes over a suitable sheave 31 on the top of the frame 20 and down to a hoisting-drum 32. This drum will be driven by any suitable mechanism, such as from the belt-pulley 33, and will act to elevate the frame 22, which will carry with it the outer or free end of the pivoted track-section 15. The car will be supported on its track-section and will thus be elevated until it can run down the track-section 15 onto the continuous inclined track. As the frame 22 moves in a straight vertical direction and the lifting-arm 17 moves on the arc of a circle it is apparent that the head 25 will have a sliding movement along said arm 17, while the shaft 24 will permit the head to rotate to conform to the changing angle of the arm 17.

The frame 22 is provided on one edge with suitable ratchet-teeth 35, and mounted on one of the columns 21 at intervals are a number of pawls 36, connected to a bar 37, which in turn is controlled by a lever 38, these pawls acting as safety devices, as is the custom with elevators.

The car 40 is suspended from a suitable trolley 41, which is provided with two wheels 42, running on top of the track, and with a downwardly-projecting portion 43, carrying a wheel 44, which bears against the bottom face of the track. The car itself is suspended from the projection 43 by means of clevises 45, having connected thereto links 46, extending out to the corners of the car. These furnish a support for the car which is steady and still permit the same to swing or rock.

Inasmuch as the car will acquire a high rate of speed in passing around on the inclined track, it is evident that some means must be provided for stopping the same when it reaches the terminal end of the track. Attached to the top of the trolley 41 are a pair of bars 48, having inclined inner faces, as shown in Fig. 11, and fitting between said bars is a dovetail projection 49 of the brake-block 50. The bars 48 converge from the front to the rear, as indicated by the dotted lines in Fig. 11, so that the brake-block 50 under the action of the brakes will be wedged tightly in place. In fact, the harder the pressure on the brake-block the tighter will it be wedged between the converging bars.

The brake consists of a pair of long bars 52, located adjacent to the track at its terminal end and arranged to engage the opposite side faces of the brake-block 50 on the trolley. These brake-bars 52 are adapted to be moved into position to engage the brake-block on the carriage by means of a system of levers, links, and rock-shafts, the same comprising an operating-shaft 55, extending transversely across the track underneath the path of the car, so as to simultaneously operate both brake-bars 52. This operating-shaft 55 is provided with a pair of arms 56, which are connected by links 57 to one arm of bell-crank levers 58, suitably hinged to an overhead beam 59. To the other arm of these bell-crank levers is connected a link 60, which is connected to an arm 61, secured to a rock-shaft 62. This rock-shaft is provided at its ends with arms 63, having a slotted connection to slide-bars 64, mounted in suitable depending brackets 65. The slide-bars 64 are secured to the brake-bars 52. Similar arrangements are employed at the two ends of the brake-bars, and intermediate the end arms 63 on the rock-shafts 62 are connected, by means of links 66, directly to the brake-bars 52, the latter arrangement being employed to prevent the long brake-bars from bowing outwardly at their centers.

The operating-shaft 55 is provided with a lever 66 for actuating the same. It will be obvious that when said lever is operated both brake-bars 52 will be moved into position to contact with the brake-block 50 on the trolley, and as a result when the latter reaches the end of the inclined track it will run in between these brake-bars 52, and thus have its speed reduced or entirely checked. Preferably a pair of brake mechanisms will be provided, as indicated in Figs. 1 and 2.

The operation of our device will be readily understood from the foregoing description. The car will be loaded when in the depressed position shown in Fig. 2. In this position the trolley will rest on the curved outer end of the hinged track-section 15. The hoisting-drum 32 will then be operated, thus raising the frame 22, and with it the hinged track-section, together with the car held thereupon. The track-section 15 will be elevated until it is in the inclined position shown in dotted lines, Fig. 2, when the car by gravity will run down the same and into the endless inclined track 12, down which it runs by gravity, acquiring speed and momentum as it proceeds. When the car reaches the lowermost portion 3 of the track, the brake-block 50 on the trolley will run in between the brake-bars 52, which will bear with sufficient friction thereon to check the car to such an extent that when it reaches the end of the track it will do no damage, and in this position it will again be elevated in the manner before described and can proceed on its way.

The device described is quite simple, the supporting frame or structure of the track is exceedingly rigid, and the elevating and braking mechanisms are such that they can be easily operated and contain few parts, so that they will not get out of order.

What we claim is—

1. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a track-section hinged at the ele-

vated point of beginning and having a curved lower end coinciding when depressed with the track at its termination, vertical columns, a frame independent of said track-section and guided in said columns, means for elevating said frame, and connections from said frame to the free end of the hinged track-section.

2. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a track-section hinged at the elevated point of beginning and having a curved lower end coinciding when depressed with the track at its termination, vertical columns, a frame guided therein, means for elevating said frame, and means having a pivotal and a sliding movement and connecting said frame with the free end of the hinged track-section.

3. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a track-section hinged at the elevated point of beginning and having a curved lower end coinciding when depressed with the track at its termination, vertical columns, a frame guided therein, means for elevating said frame, and a head pivotally supported on said frame and having a sliding connection with the free end of the hinged track-section.

4. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a track-section hinged at the elevated point of beginning and having a curved lower end coinciding when depressed with the track at its termination, vertical columns, a frame guided therein, means for elevating said frame, a head pivotally secured to said frame, and a bar having a sliding fit in said head and secured to the hinged track-section.

5. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a track-section hinged at the elevated point of beginning and having a curved lower end coinciding when depressed with the track at its termination, a lifting-bar connected to, and hinged concentric with, said rail-section, a vertically-guided frame, means for elevating the same, and connections between the same and said lifting-bar and arranged to permit of a pivotal and sliding movement.

6. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a lifting-bar hinged at the elevated point of beginning and having its lower end in proximity to the track at its termination, a rail-section secured to said lifting-bar and having a curved lower end coinciding when depressed with the track at its termination, a vertically-guided frame, means for elevating the same, and a head rotatably mounted on said frame and having a sliding connection with said lifting-bar.

7. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a lifting-bar hinged at the elevated point of beginning, brackets secured to said lifting-bar, a rail-section supported on said brackets and having a curved lower end coinciding when depressed with the track at its termination, vertical columns, a frame guided therein, connections between said frame and said lifting-bar arranged to permit a pivotal and sliding movement, a cable connected to said frame, and a hoisting-drum to which said cable is connected.

8. In a pleasure-railway, the combination with inclined rails forming a continuous track from an elevated point of beginning to an adjacent and lower termination, of an elevator comprising a track-section hinged at the elevated point of beginning and having a curved lower end coinciding when depressed with the track at its termination, a vertically-guided frame, a shaft rotatably mounted on said frame, a head on said shaft and having a sliding connection with the free end of the hinge track-section, a cable connected to said shaft, and a hoisting-drum to which said cable is connected.

9. In a pleasure-railway, the combination with an inclined track, of a car having wheels running on said track, a brake-block secured to said car, a pair of brake-bars located adjacent to said track and arranged to engage the opposite side faces of the brake-block, and means for simultaneously moving said bars.

10. In a pleasure-railway, the combination with an inclined track, of a car having wheels running on said track, a brake-block secured to said car, a pair of brake-bars adjacent to said track and arranged to engage the opposite side faces of said brake-block, a rock-shaft, means for actuating the same, and connections from said rock-shaft to said brake-bars for actuating the same.

11. In a pleasure-railway, the combination with an inclined track, of a car having wheels running on said track, a brake-block secured to said car, a pair of brake-bars located adjacent to said track and arranged to engage the opposite side faces of the brake-block, an actuating-shaft extending transversely of said track, and connections from said shaft to both of said brake-bars.

12. In a pleasure-railway, the combination with an overhead inclined track, of a trolley running on said track, a car suspended from said trolley, a brake-block secured to the trolley above the track, a brake-bar adjacent to the track and arranged to engage said block,

and means for moving said bar into the path of said block.

13. In a pleasure-railway, the combination with an overhead inclined track, a trolley running thereon, a car suspended from said trolley, a brake-block secured to the top of said trolley, a pair of brake-bars located adjacent to the track and arranged to engage the opposite side faces of said brake-block, and means for simultaneously moving said brake-bars into the path of said block.

14. In a pleasure-railway, the combination with an inclined overhead track, of a trolley running thereon, a car suspended from said trolley, a brake-block secured to the top of said trolley, a pair of brake-bars located adjacent to the track and arranged to engage the opposite side faces of said block, an actuating-shaft extending transversely of the track underneath the path of the car, and connections from the same to both of said brake-bars for actuating the same.

15. In a pleasure-railway, the combination with an inclined track, a car having wheels running on said track, a brake-block secured to said car, a pair of brake-bars located adjacent to said track and arranged to engage the opposite sides or faces of the brake-block, slides to which said bars are connected, levers engaging said slides, rock-shafts to which said levers are connected, and means for simultaneously actuating said rock-shafts.

16. In a pleasure-railway, the combination with an inclined track, of a car having wheels running on said track, bars on said car and converging toward the rear, a brake-block fitted between said converging bars, and a brake-bar adjacent to the track and arranged to contact with said block.

17. In a pleasure-railway, the combination with an inclined overhead track, of a trolley running thereon and provided with a downwardly-projecting portion, a car, and links connecting the downwardly-projecting portion of the trolley with the corners of said car and so connected to the trolley and car as to permit the latter to swing both laterally and longitudinally of the track.

18. In a pleasure-railway, the combination with an inclined overhead track, of a trolley thereon and provided with a downwardly-projecting portion, a pair of clevises connected to said downwardly-projecting portion, and a pair of links connected to each clevis, said links being connected to the corners of the car.

19. In a pleasure-railway, the combination with inclined rails forming a continuous track arranged in a plurality of spirals located one over the other, said spirals being incurved at one side, the end of the elevated beginning and the end of the lower termination extending straight across said incurved side, and an elevator located in the space formed by said incurved portions.

20. In a pleasure-railway, the combination of inclined rails forming a continuous track arranged in a plurality of spirals located one over the other, said tracks being provided with two circular end portions and a narrow connecting portion, the end of the elevated beginning and the end of the lower termination extending tangentially from the circular end portions, and an elevator located adjacent to the elevated beginning and lower termination of the track.

21. In a pleasure-railway, the combination with inclined rails forming a continuous track arranged in spirals located one over the other, said spirals being provided with two circular end portions and a narrow connecting portion, columns for supporting said tracks, a column arranged centrally of each circular end portion, and stay-rods connecting said central column with the columns supporting the track.

In testimony whereof we, the said DAVID M. RIDDLE and BEN F. SHUCK, have hereunto set our hands.

DAVID M. RIDDLE.
BEN F. SHUCK.

Witnesses:
ROBERT C. TOTTEN,
G. KREMER.