

No. 750,246.

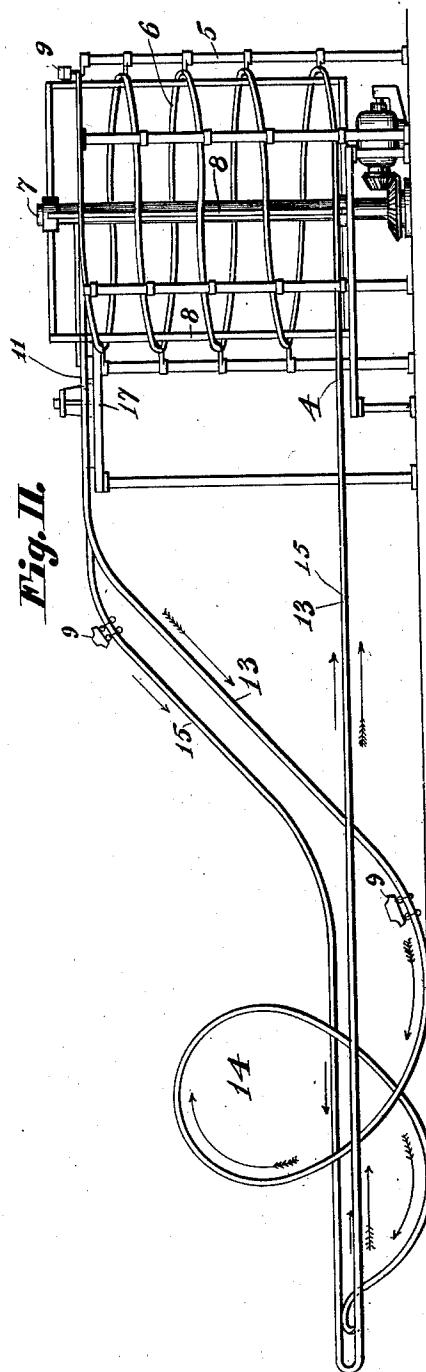
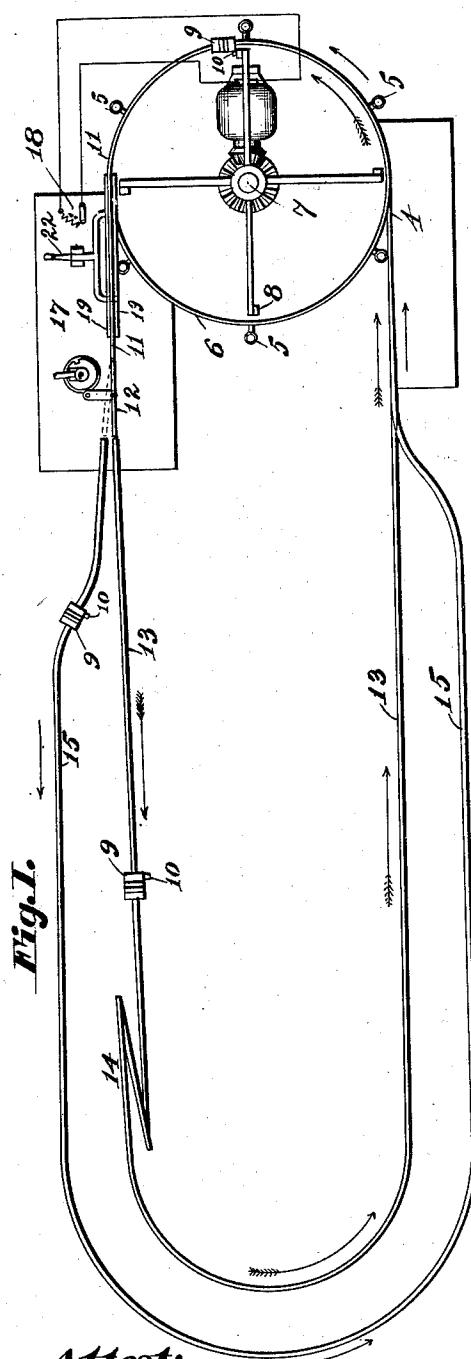
PATENTED JAN. 26, 1904.

L. BEECHER.

PLEASURE RAILWAY.  
APPLICATION FILED MAR. 6, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Attest:  
Edw. L. Dillon  
J. B. Megown.

Inventor:  
Lina Beecher,  
by Clara C. Curr,  
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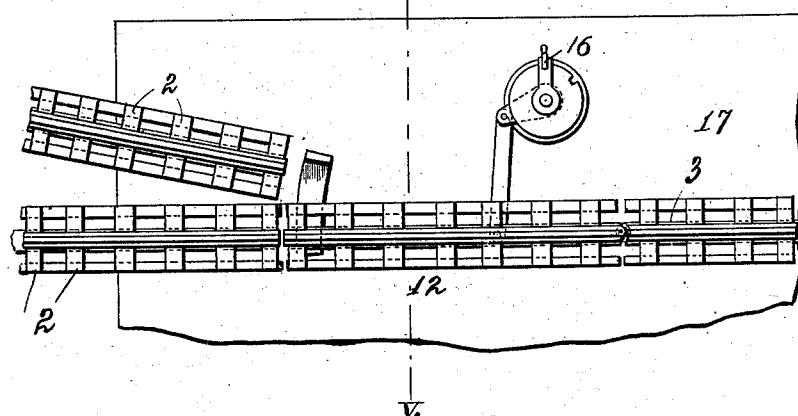
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3 SHEETS—SHEET 2.

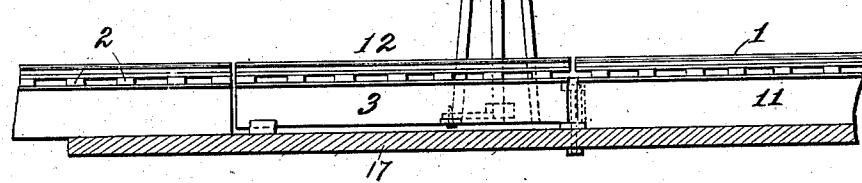
IV

*Fig. III.*

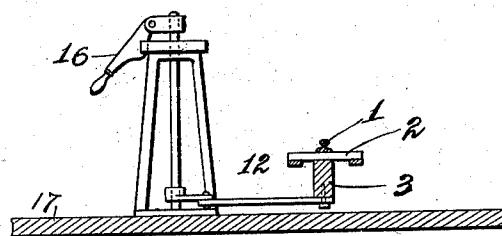


IV

*Fig. IV*



*Fig. V.*



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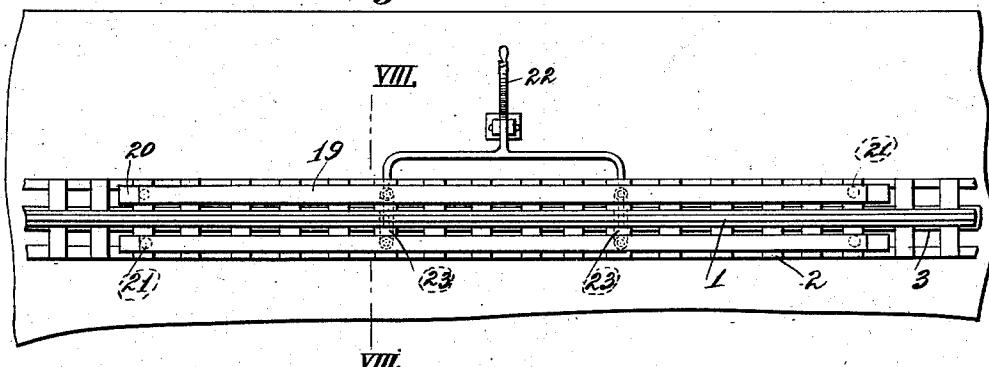
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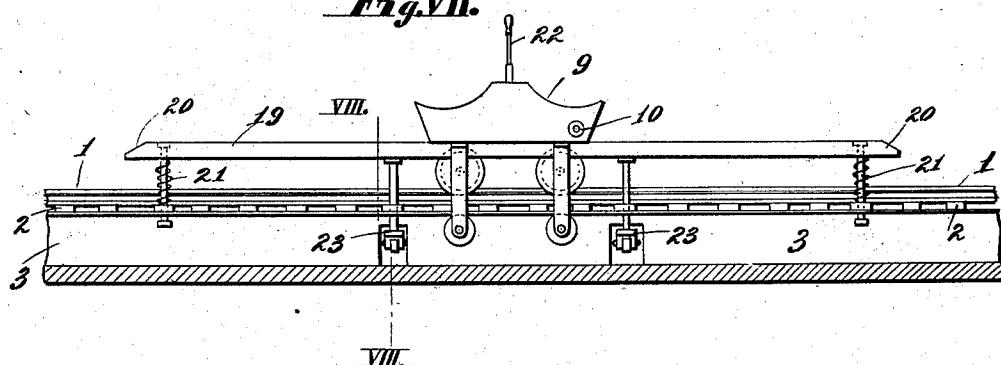
NO MODEL.

3 SHEETS—SHEET 3.

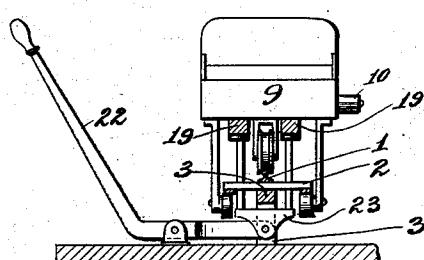
*Fig. VI.*



*Fig. VII.*



*Fig. VIII.*



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## UNITED STATES PATENT OFFICE.

LINA BEECHER, OF BATAVIA, NEW YORK, ASSIGNOR TO BEECHER CONSTRUCTION COMPANY, A CORPORATION OF MISSOURI.

## PLEASURE-RAILWAY.

SPECIFICATION forming part of Letters Patent No. 750,246, dated January 26, 1904.

Application filed March 6, 1903. Serial No. 146,540. (No model.)

To all whom it may concern:

Be it known that I, LINA BEECHER, a citizen of the United States, and a resident of Batavia, county of Genesee, and State of New York, have invented a new and useful Pleasure-Railway, of which the following is a specification.

My invention relates to pleasure-railways, and has for its principle objects to increase the capacity for handling cars, to secure a safer and more complete control over the system, and to secure other advantages herein-after disclosed.

My invention consists in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure I is a diagrammatic plan view of a railway system embodying my invention. Fig. II is a diagrammatic elevation thereof. Fig. III is a detail plan view of the switch. Fig. IV is a detail side elevation of the switch; and Fig. V is a detail end elevation of the switch, showing the track in section on line V V of Fig. III. Fig. VI is a detail plan view of the brake. Fig. VII is a detail elevation thereof. Fig. VIII is a vertical section thereof on the line VIII VIII of Fig. VI.

My railway is a single-rail system. The rail 1 rests upon cross-ties 2, which project beyond the sides of the supporting-girder 3, which is arranged directly below the rail and is supported upon any suitable columns or framework. (Not shown.) The system comprises a portion wherein the track is in a single line, (hereinafter designated as the "main" line,) a part of which is arranged in the form of a helix with a vertical axis. The supporting-frame 5 for the helical portion 6 has its columns arranged in a circle with an open interior. In the center of the cylindrical framework is arranged a vertical shaft 7, which is connected to any suitable driving or actuating mechanism arranged to cause the rotation of said shaft. Connected to the shaft, so as to turn therewith, is a cylindrical skeleton frame or series of vertical rods 8, arranged close enough to the helical track to bear against a

portion of a car 9 on said track. For this purpose the car is preferably provided with an antifriction-roller 10, projecting from its inner side in position for the rod of the cage to bear against. At the top of the helical course the track is arranged substantially straight and horizontal, but with sufficient downward inclination to render it unnecessary to use any considerable force to move a car away from the helix. The supporting-girder of a section of this straight horizontal section 11 of the track is pivotally secured at the end next to the helical course, and the opposite end of said girder is arranged to slide to and fro on its supporting-frame, so as to carry the cross-ties and rail with it, and thereby constitute a switch. The limiting positions of the switch are determined by any suitable safety appliances, such as are used for ordinary railway-switches. In one of its limiting positions the switch-rail—that is, the rail on the movable girder—is in alignment with a track or line 13, which includes a vertical or centrifugal loop 14. In its other position the switch-rail 12 is in alignment with a track or line 15, which shunts the loop. These last-mentioned lines or tracks 13 15 (hereinafter described as branch lines) proceed by different courses to a switch which connects them with the main line or section of single track, which is connected to the bottom of the helical portion of the system.

The switch-lever 16 for moving the pivotal girder is located on the platform 17 at the top of the circular frame in position for manipulation by an attendant stationed at that point. Also arranged in suitable position for manipulation by said attendant is a device 18 for controlling the actuating mechanism, so as to give said attendant full control over said actuating mechanism. Also suitably located for convenient manipulation by said attendant is a brake consisting of a long frame 19, arranged to bear upwardly against a friction-surface provided therefor on the under side of the car-body, so as to give the attendant on the stationary platform full control over the car. The end of the brake-frame toward the helical course is beveled or inclined downwardly, as shown at 20, Fig. VII, and said frame is nor-

mally held upwardly by springs 21 in such a position that its beveled end is below the bottom of the car, while its main upper surface is above said bottom. By this arrangement a 5 car moving against the inclined end bears the whole brake-frame down under the car, where the entire force of the springs is applied to increase the friction between said frame and the car-bottom and automatically check the motion 10 of the car. In addition to this automatic action the brake is arranged for positive manipulation by means of a hand-lever 22, on whose inner end is pivoted the yoke 23, which supports the frame of the brake.

15 The substantially horizontal portion of track at the top of the frame of the helical course is of sufficient length to hold a number of cars and is so arranged that all of the cars thereon are beyond the range of action of the rods of 20 the lifting device. By this arrangement the attendant can stop and hold a car for any desired length of time and release it at pleasure, and he can determine its route of travel. If the cars arrive at the top of the frame faster 25 than it is advisable to release them, the operator can store them a reasonable length of time without interrupting the regular operation of the lifting mechanism. By reason of the switch the cars may be alternately shunted 30 from one route to the other, and thus the lifting machinery can be utilized for lifting more cars than it would be practicable to run on a single route.

As hereinbefore stated, one of the branch 35 lines includes a vertical or centrifugal loop; but obviously other features may be embodied in this branch line. The other branch line may be an ordinary gravity-railway or may have a downward helical course arranged on the 40 outside of the frame of the lifting course or embody any other desired features. It is obvious also that any suitable kind of switch 45 may be used and that in place of two branch lines the switch may be made to coöperate with three or more branch lines or a plurality of switches may be used.

What I claim is—

1. A pleasure-railway comprising a tower, a single line winding up said tower in a helical course, a plurality of branch lines extending downwardly from the upper part of said tower, a switch arranged to put either of said branch lines into operative relation to the helical course, and means for forcing cars up said helical course.

2. A pleasure-railway comprising a tower, a track having a helical course on said tower, a plurality of branch lines extending downwardly from the upper part of said tower, a 55 switch arranged to put either of said branch lines into operative relation to the helical course, a loop in one of said branch lines, and means for forcing cars up said helical course.

3. A monorailway comprising a tower, a

line extending up said tower in a helical course, 65 a plurality of branch lines extending downwardly from the upper part of said tower, a switch permanently connected to the helical course and comprising a track-section consisting of a rail, cross-ties and a support therefor 70 pivotally mounted to be moved into alignment with either of said branch lines, and means forcing cars up said helical course.

4. A pleasure-railway comprising a tower, a line extending up said tower in a helical 75 course, a substantially horizontal section at the top thereof and a line extending downwardly from said horizontal section, and means for forcing cars up said helical course, 80 said horizontal section being arranged to hold a plurality of cars beyond the range of action of said lifting mechanism.

5. A pleasure-railway comprising a tower, a main line extending up said tower in a helical course, a substantially horizontal section at 85 the top of said helical course, a plurality of branch lines extending downwardly from the upper part of said tower, a switch arranged to put said horizontal section into operative relation to either of said branch lines, and 90 means for forcing cars up said helical course.

6. A pleasure-railway comprising a tower, a main line extending up said tower in a helical course, a substantially horizontal section of track at the top of said helical course, and a 95 plurality of branch lines extending downwardly from the upper part of said tower, a brake arranged in position to control the cars on said horizontal section, and a switch for putting 100 said horizontal section into operative relation to either of said branch lines, and means for forcing cars up said helical course.

7. A pleasure-railway comprising a tower, a line extending up said tower in a helical course, a substantially horizontal section at 105 the top thereof, and a line extending downwardly from said horizontal section, a brake arranged to control cars on said horizontal section, and mechanism for forcing cars up 110 said helical course, and means located in the upper portion of said tower for controlling said mechanism.

8. A pleasure-railway comprising a tower, a line extending up said tower in a helical course, a substantially horizontal section at 115 the top thereof, and a line extending downwardly from said horizontal section, a brake arranged to control cars on said horizontal section, and mechanism for forcing cars up 120 said helical course, and means in the upper portion of said tower for controlling said mechanism and close to the means for manipulating the brake.

9. A pleasure-railway comprising a tower, a line extending up said tower in a helical 125 course, a substantially horizontal section at the top thereof, a plurality of branch lines extending downwardly from said horizontal sec-

tion, a switch arranged to put said horizontal section into operative relation with either of said branch lines, and a brake arranged to control cars on said horizontal section, and mechanism for forcing said cars up said helical course, and means located on the upper portion of said tower for operating the switch and

the brake and for controlling the forcing mechanism.

St. Louis, Missouri, February 28, 1903.

LINA BEECHER.

Witnesses:

HENRY A. HAMILTON,  
JAMES A. CARR.