Mar. 3, 1925. 1,528,154

J. P. LADEN

AMUSEMENT DEVICE

Filed May 31, 1924 3 Sheets-Sheet 1

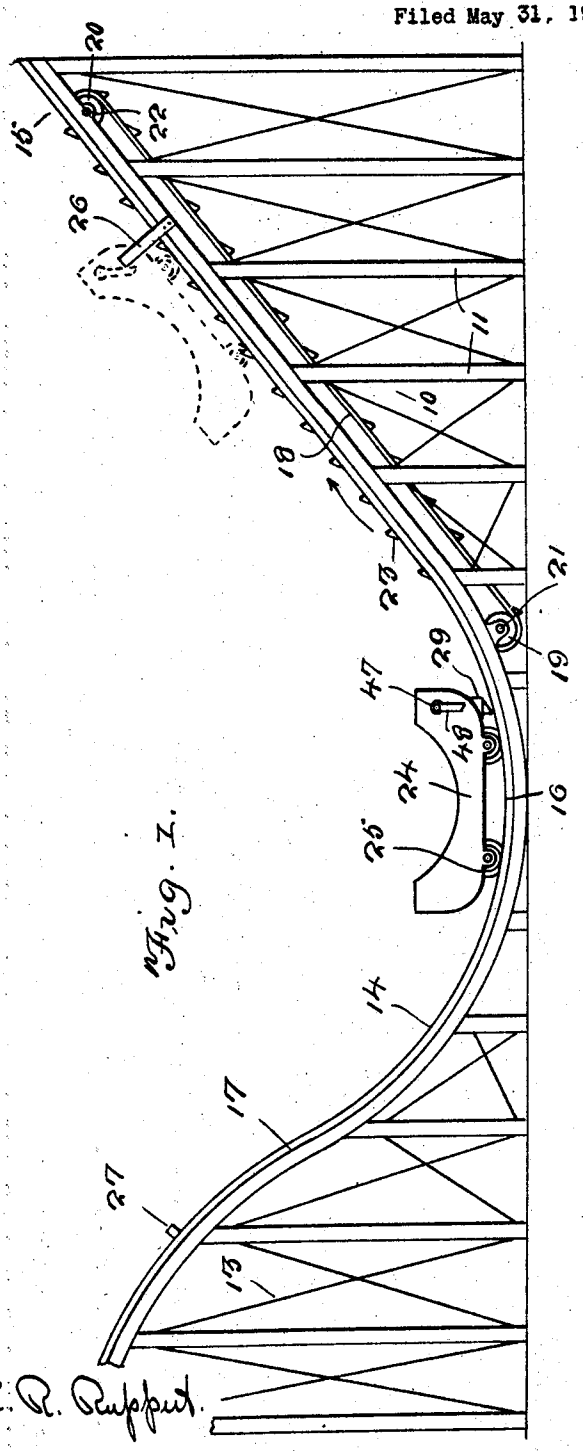

Fig. 1.

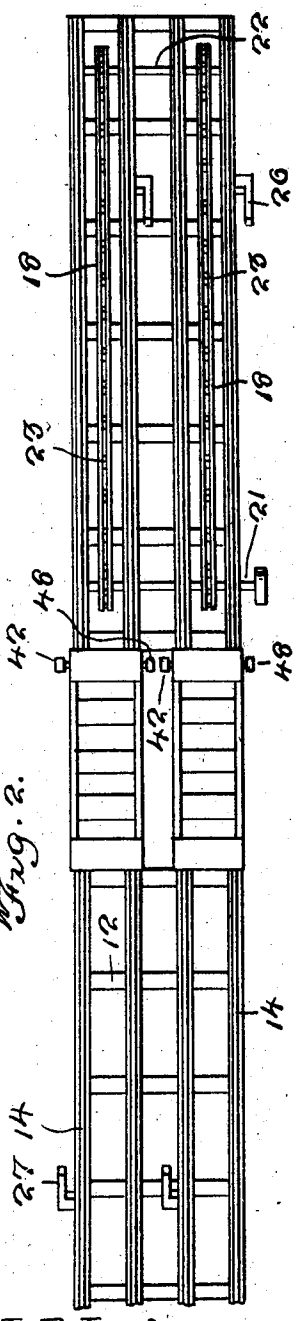

Fig. 2.

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Fig. 3.

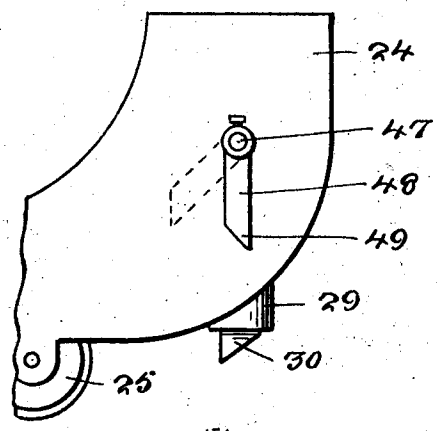

Fig. 4.

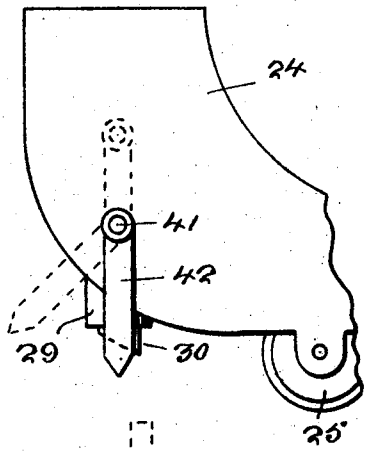

Fig. 5.

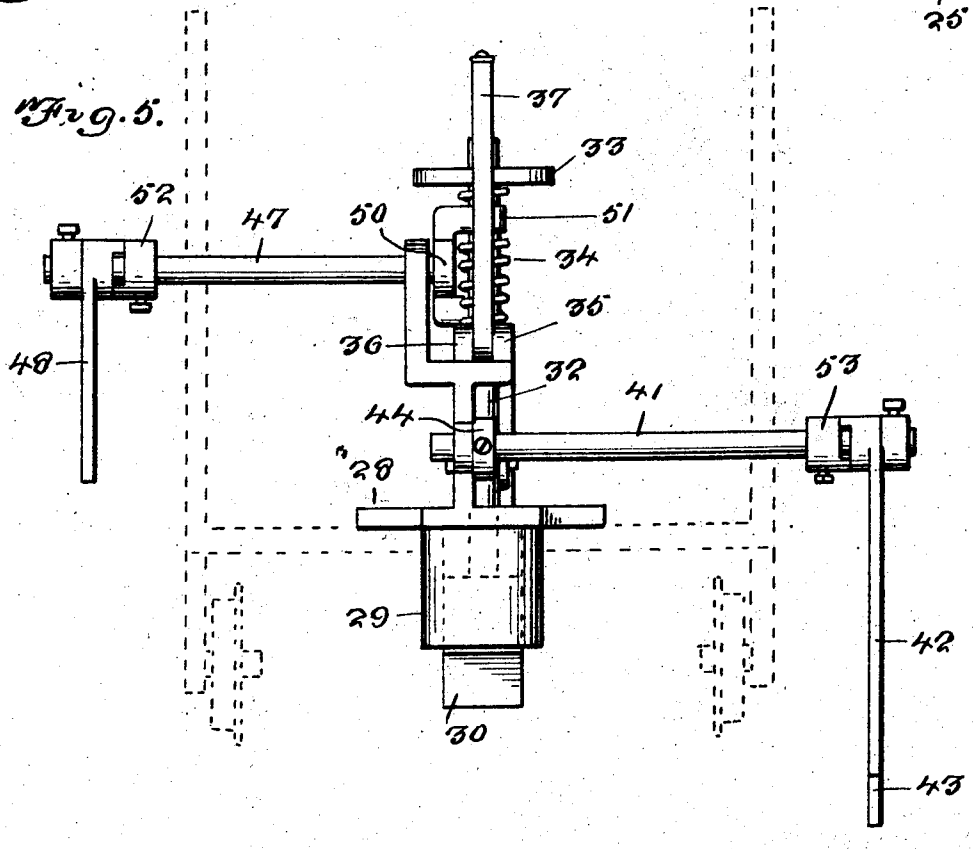

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Fig. 6.

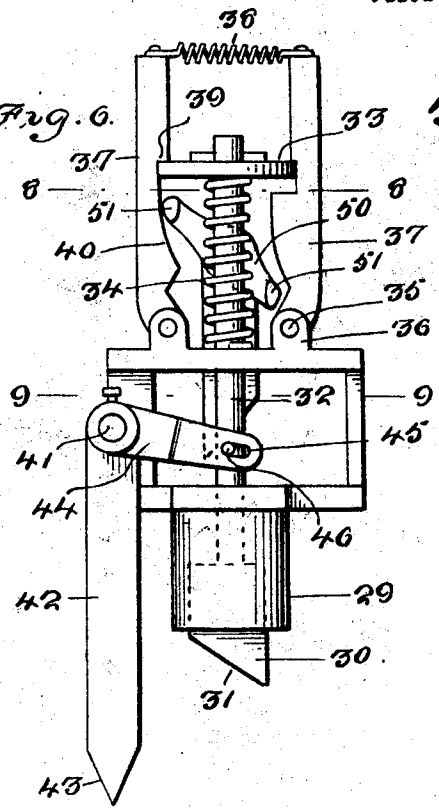


Fig. 7.

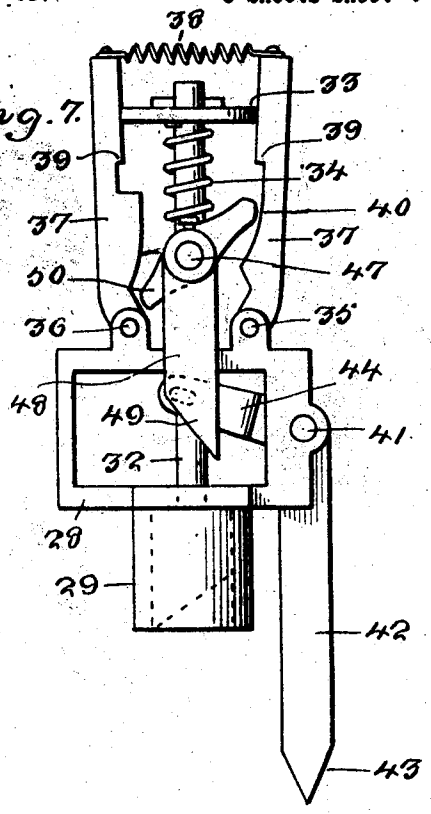


Fig. 8.

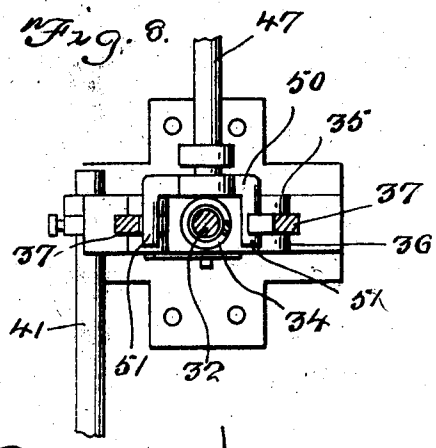
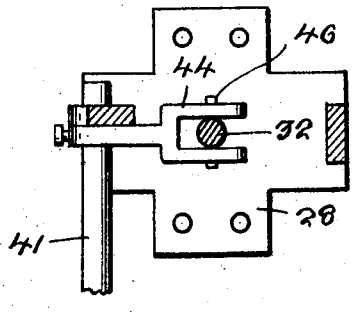


Fig. 9.



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Patented Mar. 3, 1925. 1,528,154

UNITED STATES PATENT OFFICE.

JAMES P. LADEN, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO JOSEPH S. DICKSON AND JOHN MANLY, BOTH OF LOUISVILLE, KENTUCKY.

AMUSEMENT DEVICE.

Application filed May 31, 1924. Serial No. 717,109.

To all whom it may concern:

Be it known that I, JAMES P. LADEN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Amusement Devices, of which the following is a specification.

This invention relates to amusement devices of that type extensively used in recreation parks, resorts and the like, and has for its object the provision of a novel device in the nature of a roller coaster track-way having a pronounced dip therein and upon which travels a passenger car which will travel back and forth a certain number of times per ride and which will impart quite an appreciable thrill to the passengers on account of the eccentric movement which occurs at great speed, it being furthermore intended that a plurality of the track-ways be arranged side by side so that there will be an effect of racing of the cars on the different tracks.

Another object is the provision of a device of this character which is equipped with a drive chain engaging the car at certain times for the purpose of elevating the car to one end of the track, either to start the action only, or at periodic intervals such as when the car travels toward one end, a peculiar clutch and release mechanism being provided on the car cooperating with track carried stops.

An additional object is the provision of a device of this character which will be comparatively simple and inexpensive to erect, reasonably safe in use, amusing and entertaining, durable in service, and a general improvement in the art.

With the above and other objects and advantages in view the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Figure 1 is a side elevation of a device constructed in accordance with my invention.

Figure 2 is a plan view.

Figure 3 is a fragmentary side elevation of a car on a larger scale.

Figure 4 is a similar view of the opposite side of the car.

Figure 5 is an elevation of the chain catch and control mechanism therefor carried by the car, the car being shown by dotted lines.

Figure 6 is an elevation of the catch mechanism looking at one side thereof.

Figure 7 is a similar view of the opposite side.

Figure 8 is a cross section on the line 8—8 of Figure 6.

Figure 9 is a cross section on the line 9—9 of Figure 6.

Referring more particularly to the drawings, the numeral 10 designates a suitable frame-work consisting of uprights 11, cross-members 12 and truss rods 13. The uprights are of course of different heights, as shown, and are spaced whatever distance apart is found advisable to give the requisite strength. The frame carries a pair, or a series if preferred, of tracks 14 which are inclined at one end, as shown at 15, which dip down to a pronounced degree at the centers, as shown at 16, and which have their other ends of compound curved shape, as indicated at 17. I have shown only two of the tracks arranged side by side and of course there must be a similar frame-work for supporting the different units. It is of course obvious that it is not necessary to provide more than one track-way but in such case the patronage would necessarily be greatly limited.

Extending along the inclined portion 15 of the track-way is a drive chain 18 which is trained over sprockets 19 and 20 mounted upon suitable shafts 21 and 22, respectively, located at the lower and upper ends of the inclined portion. Any suitable power device may be utilized for driving this chain in the direction of the arrow and various preferred clutch mechanisms and speed control devices may also be used as will be found advantageous. This chain carries projections or hooks 23.

In connection with the track I make use of a car 24 which has suitable rollers or wheels 25 traveling upon the track-way and at its underside this car carries a catch device adapted to be engaged by any one of the hooks 23 for the purpose of elevating

the car to the top of the incline. This catch device is of peculiar construction, as will be described, and is adapted to engage a trip 26 located at the top of the incline and a trip 27 located at the top of the portion 17.

The catch device for each car comprises a frame 28 consisting of a suitable number of parts and of proper shape mounted in any desired manner within a car at some suitable point, preferably at one end. This frame includes a depending sleeve 29 which projects below the bottom of the car and which constitutes a combined housing and guide for a catch 30 which has a beveled end 31 and which is carried by a plunger 32 slidable vertically through the frame and carrying a disk or plate 33 suitably secured at or near its upper end. Surrounding the plunger 32 and engaging against the top of the frame 28 and against the underside of the disk or plate 33 is a coil spring 34 which normally urges the plunger upwardly.

Pivoted at 35 on ears 36 at the top of the frame are arms 37 urged toward each other by a coil spring 38 and formed on their confronting edge with shoulders 39 adapted to be engaged by the disk 33 for holding the same, and consequently the plunger and catch, in lowered position against the resistance of the spring 34. The confronting edges of the arms 37 are formed with curved cam faces 40, for a purpose to be described.

Journaled through the frame 28 and projecting beyond one side of the car is a rock-shaft 41 carrying a depending trip arm 42 which has a pointed end 43, and secured upon the shaft within the frame is an arm 44 formed with a slot 45 engaging a pin 46 which projects laterally from the plunger 32. The operation of this structure will be explained hereinafter.

Journaled through the upper portion of the frame 28 and projecting beyond the opposite side of the car, is a rock-shaft 47 carrying a depending arm 48 at its outer end, which arm has a beveled end 49. Within the confines of the frame, the shaft 47 carries a fork-like cam 50 which includes arm 51 adapted to engage against the cam faces 40 for forcing the arms 37 outwardly so that the shoulders 39 will disengage the disk 33 and permit the plunger 32, and consequently the catch 30, to move into elevated position.

In the operation, the car is initially at the lowermost part 16 of the track and the passengers board the car from any suitable platform or landing stage, not shown. The car is then pushed by an attendant toward the incline 15 so that one of the hooks or projections 23 on the chain will engage the catch 30, whereupon the chain, traveling in the direction of the latter, will elevate the car to the top of the incline 15. Upon reaching this point, the arm 48 will engage the trip 26, whereupon the shaft 47 will be rocked and the cam 50 correspondingly moved so that the arms 39 will be forced apart out of engagement with the disk 33, permitting the spring 34 to force the plunger upwardly. The result is that the catch 30 is withdrawn from engagement with the chain. The car then descends the incline 15 gravitationally, passes the lowest point 16 and travels upwardly along the compound curved end 17, its momentum causing this travel. When the car reaches the upper end of the portion 17, the trip arm 42 will engage the stop 27 so that the rock-shaft 41 will be rocked, the corresponding movement of the arm 44 pushing the plunger 32 downwardly until the disk 33 again snaps behind or below the retaining shoulders 39, which action causes the catch 30 to be again projected into such position that when the car backs down the track portion 17 and starts onto the incline 15, the catch 30 will again be engaged by the chain 18 so that the car will again be dragged or pulled to the top of the incline until the trip arm 48 re-engages the stop 26. Quite naturally, this movement will continue and the car will travel back and forth along the track until the proper number of trips has been made. It is of course evident that means might be provided whereby the stops 26 and 27 could be made inactive by swinging them into non-obstructing relation to the trip arms on the car in order that the car may, after the proper number of trips, simply travel back and forth until it eventually comes to rest at the lowermost part of the track. Instead of doing this, I may prefer to provide clutch devices in connection with the trip arms 48 and 42, which clutch devices are illustrated at 52 and 53, respectively, so that the trip might be rendered inactive by the attendant riding within the car. There is absolutely no limitation as to the exact manner in which the operation may be carried out. The back and forth movement of the car and the dipping action will produce quite an exhilarating thrill in the passengers and the ride will thus be highly entertaining and amusing.

In case a plurality of the devices is used, side by side as indicated in Figure 1, it is apparent that the entertainment to be derived will be greatly increased as the cars on the different successive tracks will have the appearance of racing.

From the foregoing description and a study of the drawings, it will be apparent that I have thus provided a simply constructed and consequently inexpensive amusement device which will be very thrilling and yet reasonably safe in operation. As the structure is so simple it is apparent that there is little to get out of order so that the device should have a long life and satisfactorily perform all of its functions.

While I have shown and described the preferred embodiment of my invention, it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. An amusement device comprising an elevated structure of requisite construction, a track carried by said elevated structure and having one end inclined and its other end of compound curved shape with the intermediate portion having a pronounced dip, a drive chain traveling along said inclined portion, and a car traveling upon the track and provided with means for gripping the chain to effect elevation of the car to the top of the incline, the gripping device consisting of projections carried by the chain, a releasable catch device mounted on the car and engageable with the chain, and stops at both ends of the track for controlling the catch device.

2. An amusement device comprising an elevated structure of requisite construction, a track carried by said elevated structure and having its intermediate portion lowermost and its ends inclined, a drive chain traveling along one incline and carrying projections, a catch device on the car for cooperation with said projections, a stop at the upper end of the incline equipped with the drive chain for releasing the catch device, and a stop at the other end of the track for resetting the catch whereby the catch will be in condition to again grip the chain.

3. An amusement device comprising an elevated structure of requisite construction, a track carried by said elevated structure and having its intermediate portion lowermost and its ends inclined, a drive chain traveling along one incline and carrying projections, a catch device on the car for cooperation with said projections, a stop at the upper end of the incline equipped with the drive chain for releasing the catch device, and a stop at the other end of the track for resetting the catch, the catch device including a vertically movable upwardly spring-pressed plunger, a rock-shaft carrying a trip arm and an arm having a slot and pin connection with the plunger, a disk on the upper end of the plunger, a pair of pivoted arms spring-pressed toward each other and having shoulders engageable with the disk for holding the plunger in lower position, and a second rock-shaft carrying a trip arm and a cam disposed between said last named arms for forcing them apart to release the disk.

4. In an amusement device including an elevated structure carrying a track having its intermediate portion lowermost and its ends inclined, a drive chain traveling along from one incline and carrying projections, a car mounted for movement along the track, a catch device carried by the car and including a normally spring pressed plunger, retaining means normally holding said plunger in lowered position, a trip for releasing said retaining means, and a stop at the top of each inclined end of the track engageable by the trip, the stop at the incline equipped with the chain acting to release the catch and the other stop acting to effect resetting thereof.

5. In an amusement device including a track having an intermediate low portion and having both ends upwardly inclined, a drive chain traveling along one incline and having projections, a car adapted to move back and forth upon the track, a catch device mounted on the car for cooperation with the projections on the chain and including a normally upwardly spring pressed plunger, retaining means normally holding said plunger in lowered position in the path of movement of the projections on the chain, a trip operatively connected with said retaining means and movable to release the same, a stop at the upper end of the incline equipped with the drive chain engageable by said trip for releasing the retaining means and permit the plunger to move upward'y, a second trip connected with the plunger, and a stop at the other end of the track engageable by the second named trip whereby to effect resetting of the catch.

6. In an amusement device comprising an elevated trackway having an intermediate portion and having both ends upwardly inclined, a drive chain movable along one incline, a car mounted for movement along the trackway, a catch device on the car including a normally upwardly spring pressed plunger, spring pressed retaining means cooperating with said plunger for holding the same in lowered position against the spring tension, a rocker element cooperating with said retaining means for disengaging the same and having an actuating trip, a stop at the top of the incline equipped with the drive chain engageable by said trip for releasing said retaining means, a rocker element connected with the plunger for moving the same downwardly and including a trip, and a stop at the top of the other incline engageable by the second named trip for operating the second named rocker member and resetting the catch.

7. In an amusement device including a trackway having its intermediate portion low and having both ends upwardly inclined, a drive chain traveling along one incline, a car mounted for movement along the trackway, a chain clutching device carried by the car and including a frame, an upwardly spring pressed plunger slidably

mounted within the frame and adapted to cooperate with projections on the chain, laterally movable retaining elements acting normally to hold the plunger in lowered position against the spring tension thereon, rocker means engaging said retaining elements for urging them apart to release the plunger, said rocker means including an actuating trip, a stop at the top of the incline equipped with the drive chain and engageable by said trip, a second rocker element operatively connected with the plunger and including an actuating trip, and a stop located at the top of the other incline engageable by the second named trip for lowering the plunger to its normal position.

In testimony whereof I affix my signature.

JAMES P. LADEN.