Dec. 15, 1925. 1,565,806

J. P. LADEN

AMUSEMENT DEVICE

Filed April 10, 1925 2 Sheets-Sheet 1

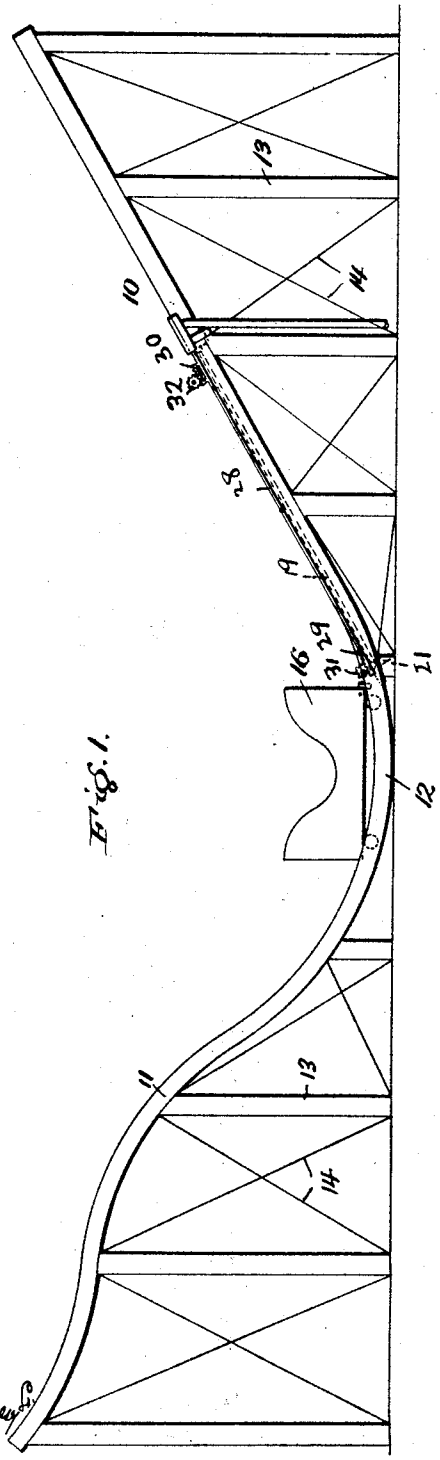

Fig. 1.

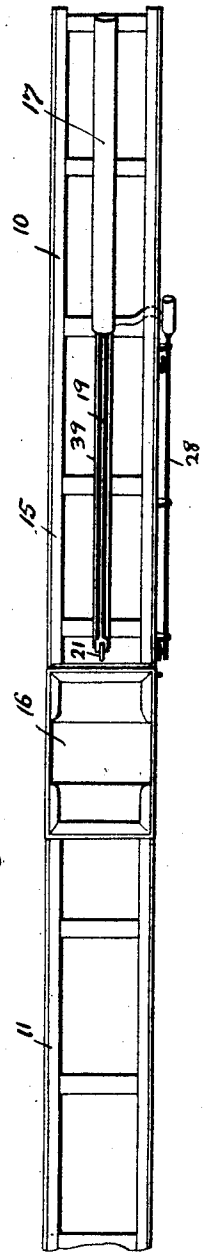

Fig. 2.

Gerald Kennedy
WITNESS:

James P. Laden.
INVENTOR
BY Victor J. Evans
ATTORNEY

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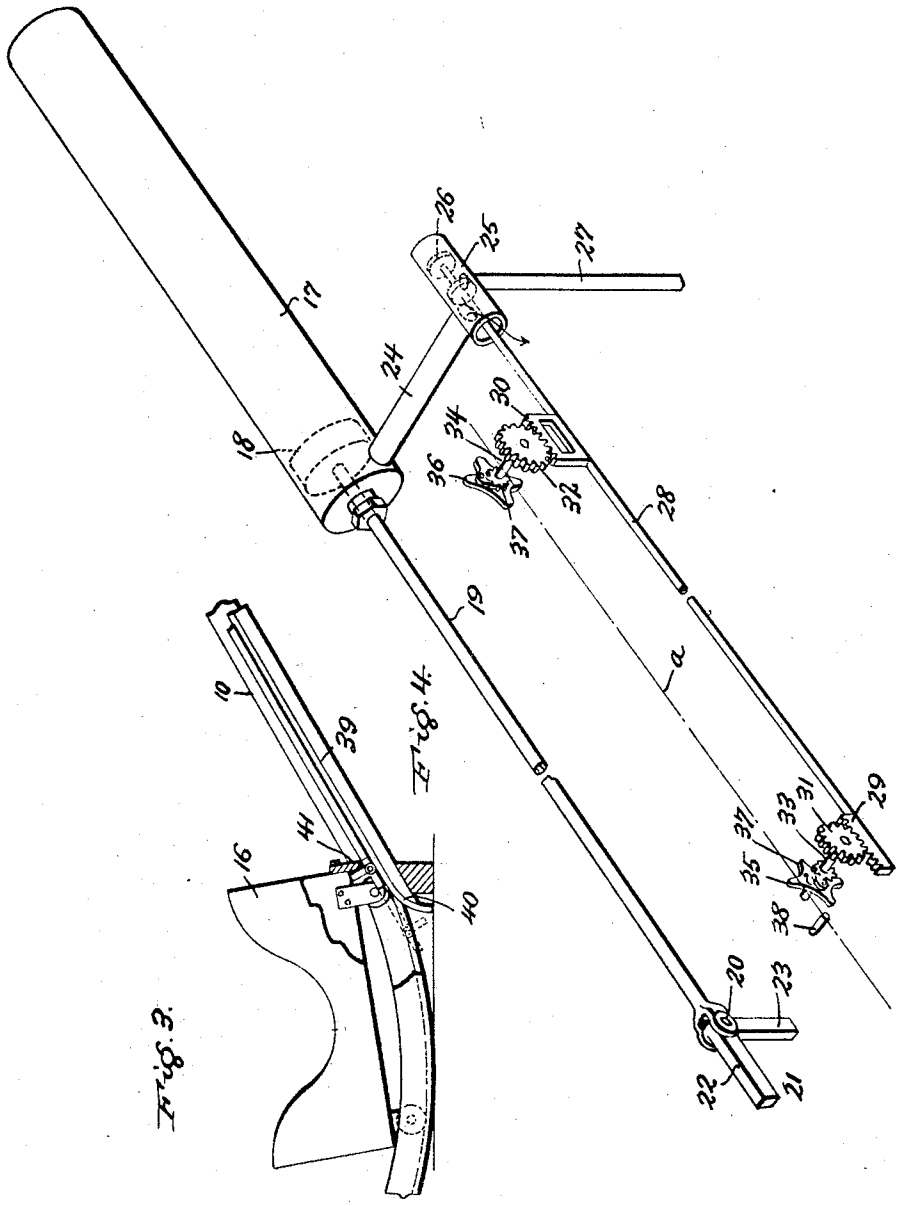

Fig. 1.

Fig. 2.

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Patented Dec. 15, 1925. 1,565,806

UNITED STATES PATENT OFFICE.

JAMES P. LADEN, OF LOUISVILLE, KENTUCKY.

AMUSEMENT DEVICE.

Application filed April 10, 1925. Serial No. 22,218.

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 and is an improvement upon a device disclosed in an application numbered 717,109, filed by me May 31, 1924, and allowed December 19, 1924, now Patent 1,528,154, issued March 3, 1925.

In the aforesaid application, a passenger car or cars travelled over an inclined track, being mechanically carried by one incline and released, so as to return by gravity and obtain sufficient momentum to ascend an opposite incline, means being provided for automatically engaging the car with and releasing said car from the mechanical carrying means each time it reached and ascended the first incline.

In the present invention, the operation is substantially the same, the difference being that pneumatically controlled means are employed for carrying the car up one incline, with means whereby the pneumatic means will be automatically controlled and the car engaged and carried up the incline and released, the momentum imparted during its initial descent being gradually increased at each following descent, so that the distance of upward travel of the car will be gradually increased, until the said car travels practically the entire distance of the track.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a side elevation of an amusement device constructed in accordance with the invention.

Figure 2 is a top plan view.

Figure 3 is an enlarged fragmentary elevation partly in section illustrating the means for engaging the car at the bottom of one of the inclines.

Figure 4 is a skeletonized perspective view showing the fluid operated means for carrying the car upward and the valve operating means for controlling the fluid.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the invention as in the application above mentioned embodies an elevated structure which includes opposite inclines 10 and 11, the latter being preferably of a compound curve. These inclines rise in opposite directions from an intermediate depressed portion 12 and are supported by suitably arranged uprights 13 and truss rods 14.

Mounted upon the structure is a track 15 over which is adapted to travel a passenger carrying car 16. It may be here mentioned that while a single car and track is illustrated, any number of tracks and cars may be employed.

Mounted upon the incline 10 is a cylinder 17 within which operates a piston or plunger 18, the latter having extending therefrom a rod 19 which is disposed longitudinally of the track. Pivotally mounted in the outer end of the rod 19 as shown at 20 is a substantially L-shaped dog 21, the latter including arms 22 and 23.

Communicating with one end of the cylinder 17 is one end of a combined inlet and exhaust pipe 24, the opposite end of which communicates with a valve casing 25 in which operates a double disk valve 26. A pipe 27 also communicates with the valve casing 25 and provides means for the supply of fluid such as compressed air.

The stem 28 of the valve 26 carries toothed racks 29 and 30. These racks are engaged by pinions 31 and 32 which are mounted respectively upon shafts 33 and 34, the latter operating in suitable bearings mounted upon the structure. Loosely mounted upon the shafts 33 and 34 are toothed wheels 35 and 36. These wheels are free to rotate upon their shafts in one direction but are locked against rotation independent of the shafts by means of pawl and ratchet mechanisms 37.

The car 16 carries a pin 38 in the path of which is located both the wheel 35 and the wheel 36. The shafts 33 and 34 however are differently spaced above the track 15 so that the pin 38 will engage the wheel 35 above its shaft 33 and will engage the wheel 36 below its shaft 34, as indicated by the dotted lines *a* in Figure 4 of the drawings.

Mounted upon the structure in the path of the dog 21 is a track 39 having a beveled or curved end 40. Mounted transversely of

one end of the car 16 is a cross bar 41 with which the dog 21 is adapted to engage.

In the operation of the device, the car 16 is manually moved in a direction upward of the incline 10. When it reaches a position at the bottom of the incline as illustrated in Figure 3 of the drawings, the pin 38 will have engaged one of the teeth of the wheel 35 so as to rotate the shaft 33 and consequently the gear 31. Movement is imparted to the rod 28 through the rack bar 29 so that the valve 26 will be positioned to admit compressed air or other fluid to the cylinder 17 through the pipe 24. The piston 18 will then be forced upward through the cylinder 17 so that the arm 23 of the dog 21 will ride up the curved or beveled end of the track 39 and cause the arm 22 to engage the bar 41 of the car 16. Continued movement of the piston 18 will cause the car to travel up the incline 10 until the pin 38 reaches the wheel 36. This will cause the wheel 36 to rotate in a direction opposite the travel of the car and will through the pinion 32 and rack 30, reverse the position of the valve 26 and permit the compressed air or other fluid to escape from the cylinder through the pipe 24 and valve casing 25 as indicated by the arrow in Figure 4 of the drawings. The weight of the car will cause the latter to move by gravity down the incline 10 with sufficient momentum to ascend an appreciable distance up the incline 11. When the momentum is spent the car will move in a reverse direction down the incline 11 so that the pin 38 will again engage the pin 35, whereupon the operation just described will be repeated. This second ascent of the car up the incline 10 will be for a greater distance than the initial ascent due to the fact that the fluid operated means for moving the car upward will be assisted by the momentum gathered during the travel of the car. This momentum will be increased at each succeeding operation so that eventually the car will travel substantially the entire distance of the track, or until the supply of fluid has been cut off from the cylinder 17 by any suitable means.

By the use of compressed air or fluid operating mechanism, the speed of the car may be rendered greater than that afforded by gravity only and may be greater in excess of any speed made possible by the structure disclosed in my before mentioned application, so that a greater thrill will be given the occupants of the car.

While a compound curve is shown at one end of the track only, it of course obvious that a curve of this character may be at both ends.

The invention is susceptible of various changes in its form proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon the structure, a car movable backward and forward over the track, pneumatically operated means mounted upon the structure and engageable with the car to carry said car an appreciable distance up one incline, means located at the bottom of said incline and engaged by the car to render the pneumatically operated means active and means spaced from the bottom of the incline to render said pneumatically operated means inactive.

2. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon said structure, a car movable backward and forward over the track, fluid operated means including a substantially L-shaped pivotally mounted dog located in the path of the car to carry said car an appreciable distance up one incline, means at the bottom of said incline and operated by the car to render the fluid operated means active, means located in the path of the dog to cause the latter to engage the car at the beginning of the operation of the fluid operated means and means spaced from the bottom of the incline to render said fluid operated means inactive.

3. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon said structure, a car movable backward and forward over the track, fluid operated means including a substantially L-shaped pivotally mounted dog located in the path of the car to carry said car an appreciable distance up one incline, means at the bottom of said incline and operated by the car to render the fluid operated means active, a track located in the path of the dog and engaging one arm of the latter to move the other arm of said dog into engagement with the car at the beginning of the operation of the fluid operated means and means spaced from the bottom of the incline to render said fluid operated means inactive.

4. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon said structure, a car movable backward and forward over the track, a cylinder mounted upon one incline, a piston operated rod extending from the cylinder, normally inactive means at one end of the rod to engage the car, a valve for controlling the admission of fluid to and the escape of fluid from the cylinder to operate

the piston, means located in the path of the car engaging means to move the latter to an active position, means located at the bottom of the incline to operate the valve and admit fluid to the cylinder, whereby the car will be carried upward and means spaced from the bottom of the incline to operate the valve and exhaust the cylinder and permit the car to return by gravity.

5. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon said structure, a car movable backward and forward over the track, a cylinder mounted upon one incline, a piston operated rod extending from the cylinder, a substantially L-shaped dog pivotally secured to one end of the rod for engaging the car, a valve for controlling the admission of fluid to and the escape of fluid from the cylinder to operate the piston, means located in the path of the L-shaped dog to move the latter to car engaging position, means located at the bottom of the incline to operate the valve and admit fluid to the cylinder whereby the car will be carried upward and means spaced from the bottom of the incline to operate the valve and exhaust the cylinder and permit the car to return by gravity.

6. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon said structure, a car movable backward and forward over the track, a cylinder mounted upon one incline, a piston operated rod extending from the cylinder, normally inactive means at one end of the rod to engage the car, a combined inlet and exhaust valve for controlling the admission of fluid to and the escape of fluid from the cylinder to operate the piston, means located in the path of the car engaging means to move the latter to an active position, means located at the bottom of the incline to operate the valve and admit fluid to the cylinder whereby the fluid operated means will be rendered active and the car engaging means moved to engage the car and means spaced from the bottom of the incline to operate the valve and exhaust the cylinder and permit the car to return by gravity.

7. An amusement device comprising an elevated structure having its intermediate portion lowermost and its ends inclined, a track mounted upon said structure, a car movable backward and forward over the track, a cylinder mounted upon one incline, a piston operated rod extending from the cylinder, normally inactive means at one end of the rod to engage the car, a valve for controlling the admission and escape of fluid to and from the cylinder to operate the piston, means located in the path of the car engaging means to move the latter to an active position, spaced valve actuating devices located in the path of the car for opening and closing the valve and means carried by the car to engage the valve actuating devices to alternately open and close the valve to carry the car up one incline and permit said car to return by gravity.

In testimony whereof I affix my signature.

JAMES P. LADEN.