H. E. K. HINGENITZ.

AMUSEMENT DEVICE.

APPLICATION FILED APR. 8, 1921.

1,405,213.

Patented Jan. 31, 1922.

3 SHEETS—SHEET 1.

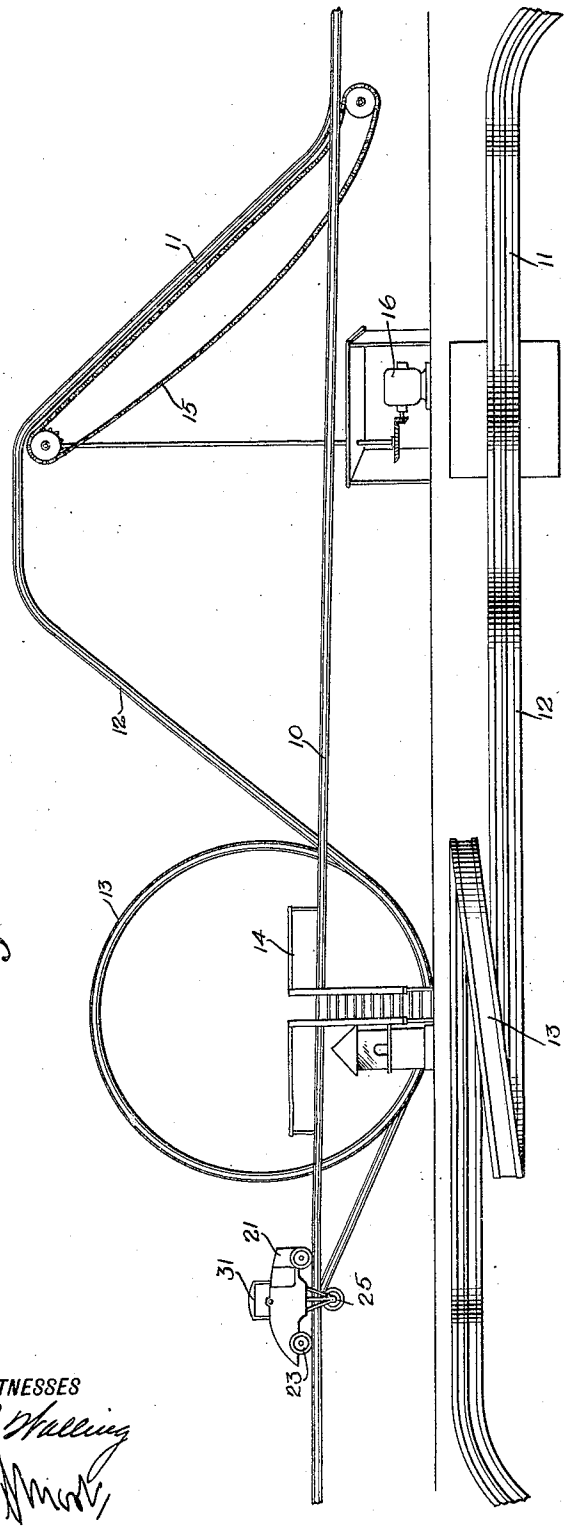


Fig. 1.

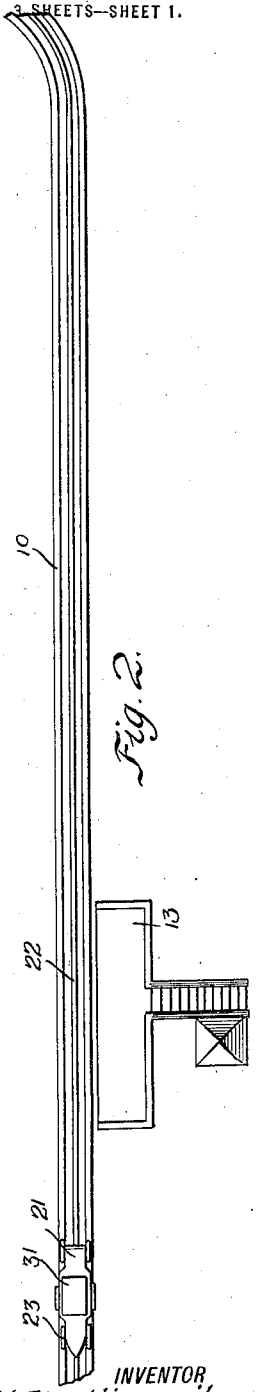


Fig. 2.

WITNESSES

G. C. Walling

A. H. Mackaye

INVENTOR

H. E. K. Hingenitz

BY Munn & Co

ATTORNEYS

H. E. K. HINGENITZ.

AMUSEMENT DEVICE.

APPLICATION FILED APR. 8, 1921.

1,405,213. Patented Jan. 31, 1922.

3 SHEETS—SHEET 2.

Fig. 3.

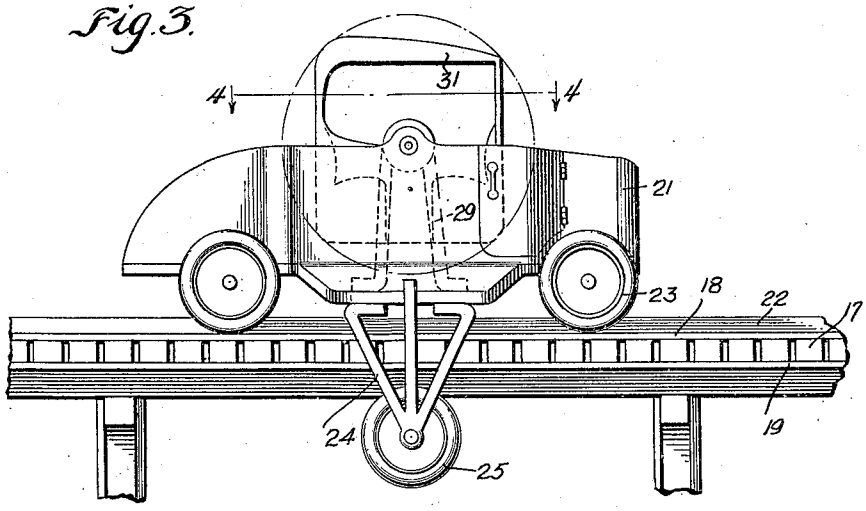
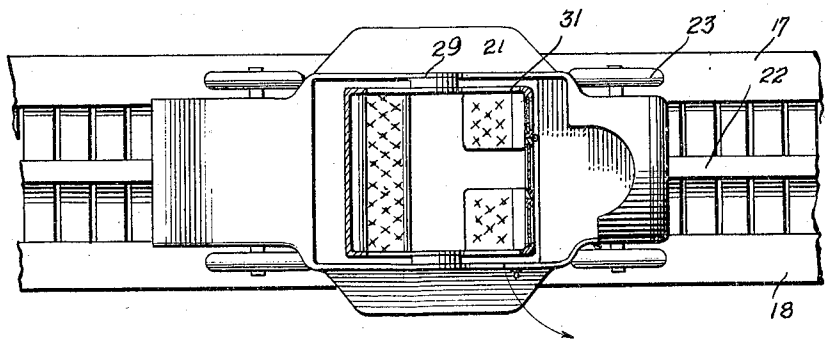


Fig. 4.



WITNESSES

G. C. Walling

A. H. Montgomery

INVENTOR

H. E. K. Hingenitz

BY Munn & Co

ATTORNEYS

H. E. K. HINGENITZ.

AMUSEMENT DEVICE.

APPLICATION FILED APR. 8, 1921.

1,405,213.

Patented Jan. 31, 1922.

3 SHEETS—SHEET 3.

Fig. 5.

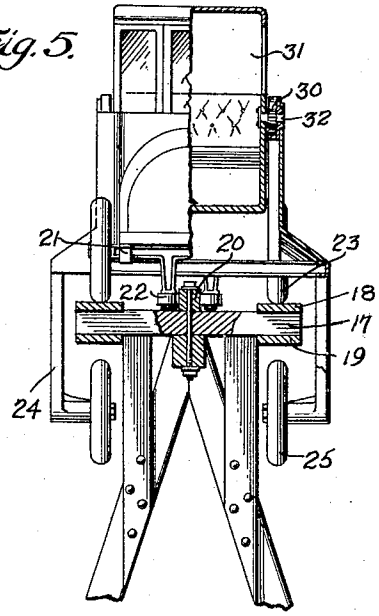


Fig. 6.

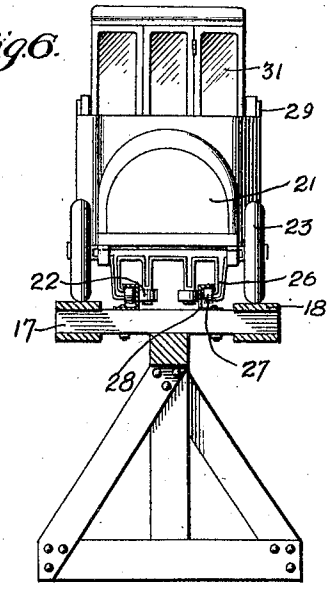


Fig. 7.

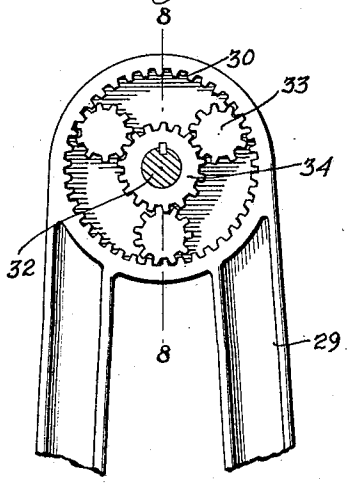
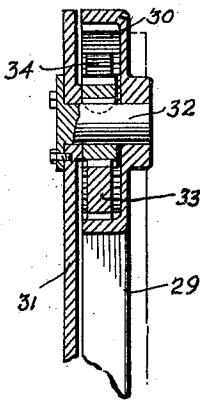


Fig. 8.



WITNESSES

G. C. Walling

INVENTOR

H. E. K. Hingenitz

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

HANS E. K. HINGENITZ, OF POCATELLO, IDAHO.

AMUSEMENT DEVICE.

1,405,213. Specification of Letters Patent. Patented Jan. 31, 1922.

Application filed April 8, 1921. Serial No. 459,619.

To all whom it may concern:

Be it known that I, HANS E. K. HINGENITZ, a citizen of Germany, and resident of Pocatello, in the county of Bannock and State of Idaho, have invented a new and Improved Amusement Device, of which the following is a full, clear, and exact description.

My invention relates to an amusement device, and aims to provide certain new and useful improvements therein, and more particularly what is commonly known as a pleasure railway.

The particular class of pleasure railway to which my device relates is that which is commonly known as a "loop-the-loop" and it is well understood in connection with devices of this character, that considerable difficulty has been experienced in constructing the same. This difficulty is to be predicated to the fact that it has been necessary to provide an absolutely efficient form of safety device which would preclude any possibility of accident, resulting in the vehicle utilized jumping the tracks or in the centrifugal force being less than the force of gravity under certain conditions.

Still another difficulty which has been found to exist is that persons utilizing the same have objected to assuming the "upside-down" position which they necessarily must in executing the loop.

Having these difficulties in mind, I have constructed an amusement device in the nature of a pleasure railway which shall provide safety means, absolutely precluding any danger resulting in the event of either the vehicle jumping from the rails, or in the event that the centrifugal force is less under certain conditions than the force of gravity.

With these and other objects in mind, reference is had to the annexed specification, taken in connection with the attached sheets of drawings, which latter present one practical embodiment of the same, and in which;

Figure 1 is a side view of a pleasure railway embodying my improved construction.

Figure 2 is a fragmentary plan view thereof.

Figure 3 is a side view of the vehicle utilized.

Figure 4 is a sectional plan view thereof taken along the line 4—4 and in the direction of the arrows indicated in Figure 3.

Figure 5 is a partly fragmentary cross sectional view of a railway and showing a carriage employing one type of safety device mounted thereon.

Figure 6 is a view similar to Figure 5 but showing a slightly modified form of safety appliance in use.

Figure 7 is a sectional view of a detail of the vehicle construction, and

Figure 8 is a sectional front view taken along the line 8—8, and in the direction of the arrows indicated in Figure 7.

In these views the reference numeral 10 indicates a track hereinafter more fully described, which is provided with a ramp 11, an incline constituting a descent 12, and a loop 13 of any desirable type, with a station 14 associated with it for the purpose of receiving and discharging passengers.

Also an endless element 15 suitably driven by a motor 16 co-operates with the incline 11 to carry the vehicle up the same.

Referring now more particularly to the track structure, it will be seen, reference being had to Figure 5 that the same conveniently includes a supporting surface 17 upon which rails 18 of any suitable character are positioned, it being noted that duplicate rails 19 are provided on the under side of this supporting surface for a purpose hereinafter more fully specified. Further, a member 20 providing a ridge is centrally disposed between the rails 18, and it will be noted that the chassis 21 of the vehicle mounts rollers 22 which engage opposite faces of the member 20 thus obviously preventing a side-sway of the vehicle, it being noted that the main wheels 23 of the same normally co-operate with the rails 18.

It will be obvious that the structure aforementioned will movably support a vehicle and will prevent an undue amount of side-sway on the part of the same, and with a view of preventing any accident occurring in the event of the wheels 23 jumping from the rails 18, or if the force of gravity should be greater than the centrifugal force, while the vehicle was passing around the loop 13, it will be noted that I utilize a pair of arms 24 which have their upper end secured to the chassis 21, and extend upon opposite sides of and in spaced relationship from the supporting surface 17, the lower ends of these arms carrying wheels 25.

These latter wheels are normally spaced from the wheels 19, but it will be appreci-

ated, assuming that the force of gravity should cause the wheels 23 to move out of contact with the rails 18 that the wheels 25 will obviously engage the rails 19 and that any accident will thus have been prevented.

A similar result is achieved by the structure illustrated in Figure 6, which construction is similar to that illustrated in Figure 5 with the exception that the arms 24 of the vehicle are far smaller as has been designated by the reference numeral 26. Also these arms carry rollers or pulleys 27 which latter are capable of engaging the inner faces of the upper arms of U shaped rails 28 secured to the upper face of the supporting surface 17, it being noted that by this construction the member 20 may be eliminated, but that side sway is prevented by the pulleys 22 engaging the outer faces of the base of the U shaped rails 28.

It will be noted, in this last named construction that the rails 27 are normally spaced from the rails 28 but it will be appreciated, as in the construction illustrated in Figure 5 that upon the vehicle chassis 21 showing a tendency to leave the rails 18 that the members 27 cooperating with the rails 28 will prevent this from occurring.

Finally with regard to the vehicle utilized, it will be noted that the same includes a chassis 21, as has been aforementioned, but it will also be seen, referring to Figures 3, 4 and 5 that a pair of standards 29 which terminate in an annular gear 30 having its teeth extending inwardly towards a common center, are utilized. A passenger compartment 31 is provided, and this compartment provides a pair of trunnions 32, it being noted that the compartment 31 is antifrictionally supported upon the standards 29 by means of a plurality of gears 33 interposed between the teeth of the gear 30 and the gear 34 keyed to the trunnions 32.

From the foregoing it will be appreciated that I have constructed a pleasure railway in which primarily a safety device will be incorporated precluding any possibility of the vehicle carrying the passengers leaving the track, and resulting in an accident.

Also it will be appreciated that the compartment 31 may be occupied by passengers, and that the same will be free to move with respect to the chassis 21, as far as a swaying action is concerned. Thus, the compartment 31 by virtue of the fact that its center of gravity is below its point of pivotal support (trunnions 32) will at all times remain in a horizontal plane. Thus passengers occupying this compartment will not be discomforted by the vehicle following the loop 13 by virtue of the fact that the vehicle is free to follow this loop, and the compartment 31 remains in a horizontal plane, the said vehicle revolving around the compartment.

Obviously numerous modifications of structure might readily be resorted to without in the least departing from the spirit of my invention, which I claim as;

1. A pleasure railway including, in combination with a supporting surface and a vehicle therefor, rails secured to said supporting surface, said vehicle normally resting upon said rails, a passenger compartment, and means for connecting said compartment to said vehicle and permitting of a complete revolution of the latter with respect to the former.

2. A pleasure railway, including in combination with a supporting surface, of a vehicle therefor, standards carried by said vehicle, a passenger compartment, trunnions secured to said passenger compartment, said trunnions engaging said standards whereby to permit of a complete revolution of said vehicle with respect to said compartment.

3. A pleasure railway including in combination with a supporting surface, of a vehicle therefor, standards carried by said vehicle, a passenger compartment, trunnions secured to said passenger compartment, gears fixedly secured to each of said trunnions, inwardly extending gear teeth associated with each of said standards adjacent their upper ends, and further gears interposed between each of said trunnion gears and said standard gears.

HANS E. K. HINGENITZ.