

No. 649,391.

Patented May 8, 1900.

A. L. BAIRD.
RECREATIONAL APPARATUS.

(No Model.)

(Application filed Sept. 15, 1899.)

3 Sheets—Sheet 1.

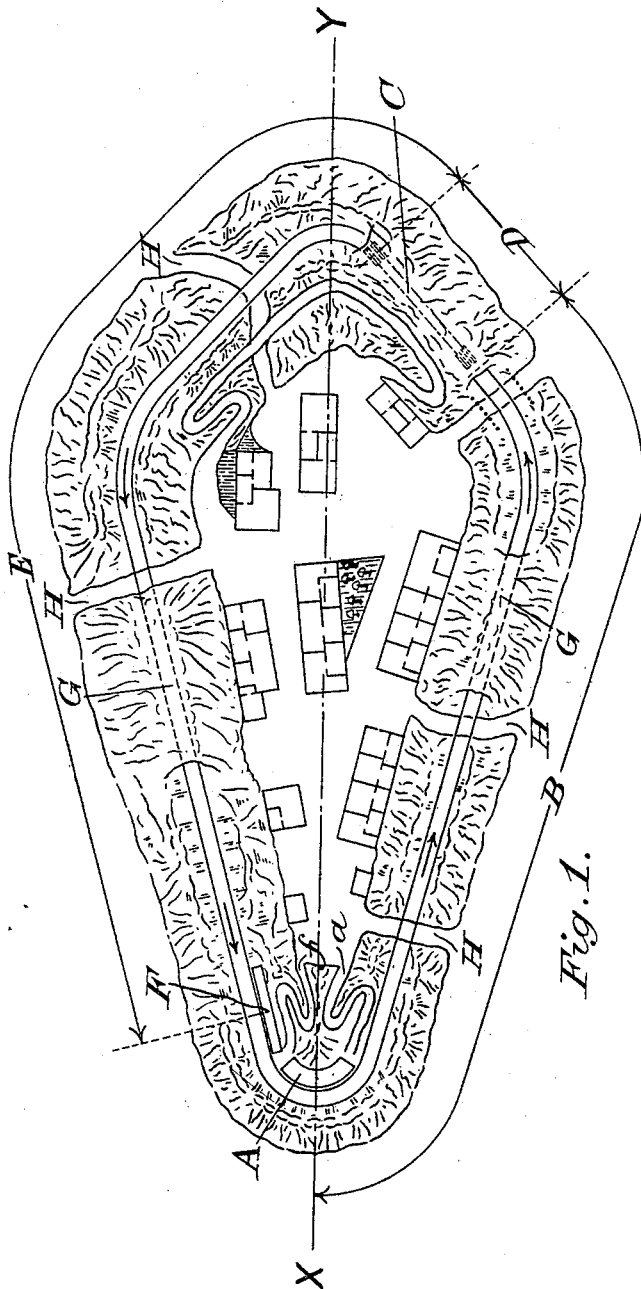


Fig. 1.



Fig. 2.

WITNESSES:
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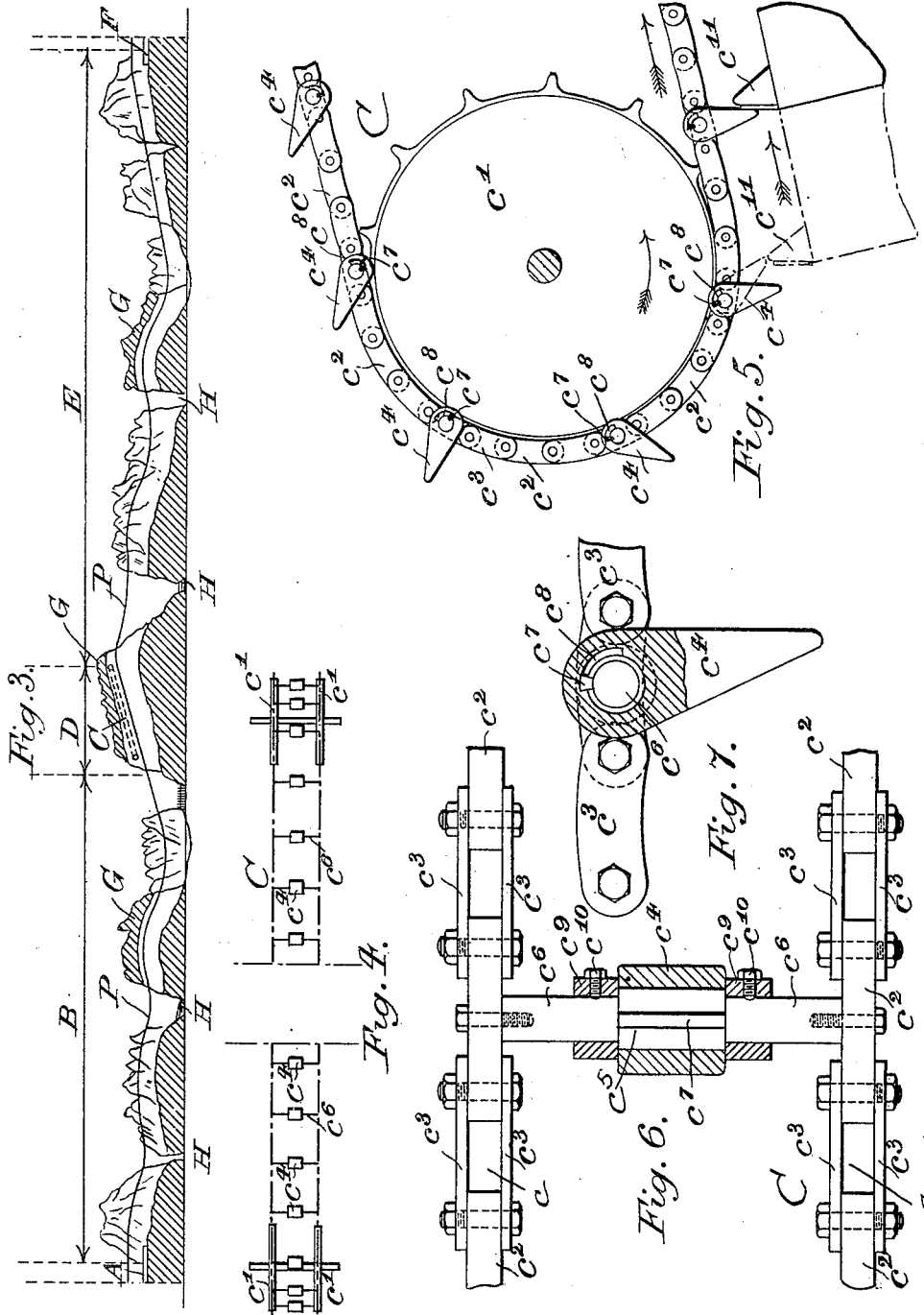
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

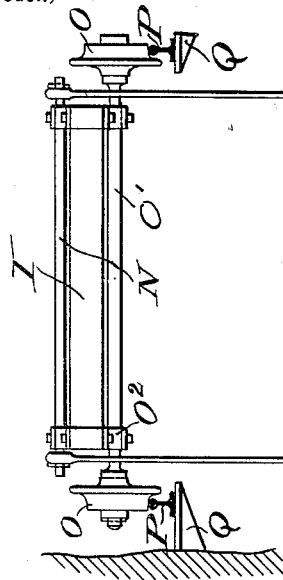


Fig. 9.

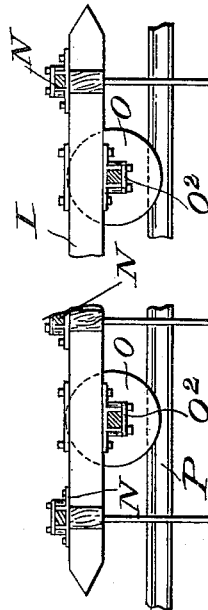


Fig. 8.

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UNITED STATES PATENT OFFICE.

ARCHIBALD LAIDLAW BAIRD, OF LONDON, ENGLAND.

RECREATIONAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 649,391, dated May 8, 1900.

Application filed September 15, 1899. Serial No. 730,623. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD LAIDLAW BAIRD, a subject of the Queen of Great Britain and Ireland, residing at 8 Upper Bedford Place, London, England, have invented certain new and useful Improvements in Recreational Apparatus Adapted to be Used in Public Grounds and Like Places, (for which I have made application for Letters Patent in Great Britain, No. 1,846, bearing date January 26, 1899,) of which the following is a specification.

My invention relates to improvements in recreational apparatus adapted to be used in public grounds and like places; and it consists of a combination and arrangement of parts devised with the object of suggesting or resembling as far as possible aerial flight.

A distinguishing and the principal characteristic of my invention is the nature or arrangement of the route traversed by the passenger-cars, which is so disposed that the cars are caused to return to approximately the same place as that from which they started, such journey or progress being continuous, the route followed resembling as far as possible the flight of the well-known boomerang.

In carrying out my invention I employ a looped or pear-shaped track which is provided with two rails for the purpose of receiving frames or carriages from which passenger-cars are suspended. The passenger-cars may be of any suitable shape and construction, though I prefer to make them of a light but strong and durable construction, pointed at the front or both ends, so as to resemble in general outline a torpedo or cigar, as this form offers little resistance to progress through the air and is more or less suggestive of aerial flight. The track traversed by the passenger-cars is divided into three sections—an undulating downward slope from the top of which the cars start and descend by gravity, an ascending slope up which they are carried or driven, as will be hereinafter explained, by an endless driving-band to a height greater than the starting-point from which they have previously descended by gravity, and an undulating slope down which after being released from the driving-band they travel by gravity to ap-

proximately the same point as that from which they originally started.

Instead of a single set of rails I may, if it is found desirable, employ two or more parallel sets, thus increasing the earning capacity of my recreational apparatus, and I may, if desired, provide any suitable appliances for releasing the passenger-cars on starting and for bringing them to a standstill at the end of their journey.

The grounds surrounding the car route or track are built up or constructed to resemble mountain scenery, passes, ravines, valleys, &c., so as to add to the suggestion of aerial flight, and tunnels may also be provided at intervals.

Referring to the drawings which form a part of this specification, Figure 1 is a plan showing the form of route traversed by the passenger-cars and the manner in which the surrounding grounds may be built up or constructed so as to add to the suggestion of aerial flight. Fig. 2 is a cross-section on line X Y, Fig. 1. Fig. 3 is a sectional elevation showing, on a reduced scale, a horizontal development of the said car route or track. Figs. 4 to 7 illustrate the method by which the passenger-cars are carried or driven up the ascending slope before referred to, Fig. 4 being a diagram of the arrangement of driving-band and double-chain wheels, Fig. 5 a diagram illustrating the action of the said driving-band, and Figs. 6 and 7 details of the construction of the driving-band. Figs. 8 and 9 illustrate the construction of car I have devised.

In Figs. 1, 2, and 3, A is the platform by which the passengers enter the cars. *a* is the winding path ascending thereto. B is the first section of the car-track. C is the endless driving-band by which the cars are driven or carried up the ascending or second section D of the car-track. E is the third section of the car-track. F is the platform at which the passengers alight. *f* is the winding pathway descending therefrom. G are tunnels, and H are passes or ravines, which may be disposed at various parts of the route and which may be crossed by bridges *h*.

The central space inclosed by the car route or track may be adapted to form a Swiss cottage or village or may contain a number of

stalls or booths where various articles may be sold. As will be readily understood, the grounds surrounding and inclosed by the car route or track may be variously arranged or disposed.

For the purpose of raising the passenger-cars to a greater height than that from which they have started I employ the device illustrated by Figs. 4 to 7. In these figures, C represents the driving-band, the position of which on the car route or track is shown in Figs. 1 and 3. The driving-band C is formed of two chains *c*, driven by two pairs of toothed wheels *c'* and connected at suitable intervals by bars carrying the car-driving device. The chains *c* consist of alternate block-links *c²* and links *c³*, connecting the block-links and embracing the teeth of the wheels *c'*. The car-driving device consists of counterweighted pivoted cams or projections *c⁴*, mounted on enlargements *c⁵* of the bars *c⁶*. The enlargements *c⁵* of the bars *c⁶* are provided with a keyway to receive a wedge *c⁷*. Segmental slots *c⁸* are cut in the pivoted cams or projections *c⁴* to allow of their moving through a sufficiently-large angle to enable a passenger-car to overrun the driving-band when its speed exceeds that of the driving-band, and the acting ends of the cams or projections must have sufficient weight to promptly return them to the correct position for being acted on by or for driving the passenger-car. Springs may be used as an additional means for insuring the prompt return of the cams or projections. *c⁹* represents sleeves fixed to the bars *c⁶* by screws *c¹⁰*, which serve as a means for keeping the cams or projections in position and for preventing the shifting of the wedges *c⁷*. The driving-band is placed over the center of the car-track and comes in contact with a projection *c¹¹* on the frame or carriage from which the passenger-car is suspended. The driving-band may be driven by a steam or gas engine or an electric motor. The action of the driving-band will be understood from the foregoing description and an inspection of Fig. 5, which shows in full lines a car being picked up and driven by a cam or projection and shows in broken lines the car overrunning the driving-chain.

In Figs. 8 and 9 I is the frame or carriage from which the car J is suspended by rods K. The cars J are pointed at one or both ends and are constructed of angle-steel framework, so as to be of a light but strong construction. L represents the seats for the passengers, and L' the footboards. As will be seen, the cross-section of the car somewhat resembles that of a boat. The undersurface of the cars is covered with wire network, perforated metal, or the like, so as to afford a view of the scenery underneath, and thus add to the suggestion of aerial flight. M represents the ends of projecting rods carried by the cars, which enter eyes in the lower ends of the rods K. The upper ends of the rods K are provided with eyes fitting the ends of cross-bars N, carried by the

frame or carriage I. O represents flanged wheels mounted on the ends of axles O', carried in suitable brackets O² on the frame or carriage I. The flanged wheels O are adapted to run on rails P, which are supported at suitable intervals by brackets Q, secured to the surrounding structure, the constructive details of which are covered up so as to increase the realistic effect of the surrounding parts. By thus suspending, as above described, the passenger-car from the frame or carriage by means of rods jointed to the frame or carriage and car the rods will always hang vertical and the cars assume a position parallel to the rails, no matter what the inclination of the car course or track may be, while the rolling contact afforded by the frame or carriage, being supported on wheels, reduces resistance to the forward motion of the cars to a minimum.

I prefer in cases where very sharp curves obtain to construct the forward part of the frame or carriage so that the front wheels may swivel.

The general action or operation of my improved recreational apparatus is as follows: A car starts from the platform A and passes over the first section B of the track by means of gravity. The car is carried by its momentum partly up the second section D and is automatically picked up by the driving-band C when the speed of the latter exceeds that of the car. The car when automatically released from the driving-band C has had sufficient momentum imparted to it to insure its passage over the final section E of the track and arrival at the platform F, situated at approximately its point of departure.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In gravity-railways for recreational purposes, the combination of gravity-actuated suspended cars, a looped or pear-shaped track arranged as mountain scenery provided with tunnels and passes, said track being provided with an intermediate ascending section up which a car partly runs by previously-acquired momentum, an overhead driving-band disposed in said intermediate ascending section and provided with pivoted cams or projections arranged to travel with the band and adapted to allow a car to overrun the driving-band when its speed exceeds that of the driving-band and to pick the car up when its speed falls below that of the driving-band in order to raise it to a greater height than that from which it started, substantially as described.

2. In gravity-railways for recreational purposes, a driving-band consisting of two chains connected by bars, such bars being provided at intervals with pivoted cams or projections capable of a limited motion in one direction, substantially as described.

3. In gravity-railways for recreational purposes, a driving-band consisting of two chains

connected by bars, said bars being provided at intervals with an enlarged portion upon which a cam or projection is mounted, a wedge fitting into a keyway in said enlargement and taking into a segmental slot in said cam or projection and sleeves for retaining the said cam or projection and wedge in position, as described herein.

4. In gravity-railways for recreational purposes, the combination of a frame or carriage provided with wheels, a car constructed of angle-steel framework and suspended by rods

jointed to the frame or carriage and the car, the lower part of such car being covered with wire network, perforated metal or the like so as to afford a view of the scenery underneath, substantially as described. 15

In testimony that I claim the foregoing as my invention I have signed my name in the presence of two subscribing witnesses.

ARCHIBALD LAIDLAW BAIRD.

Witnesses:

CHARLES FLETCHER ENNIS,
GEORGE STANLEY HOWELL.