S. D'AGOSTINO.

SWITCHBACK COASTER.

APPLICATION FILED AUG. 18, 1913.

1,097,615.

Patented May 26, 1914.

3 SHEETS—SHEET 1.

FIG. 1.

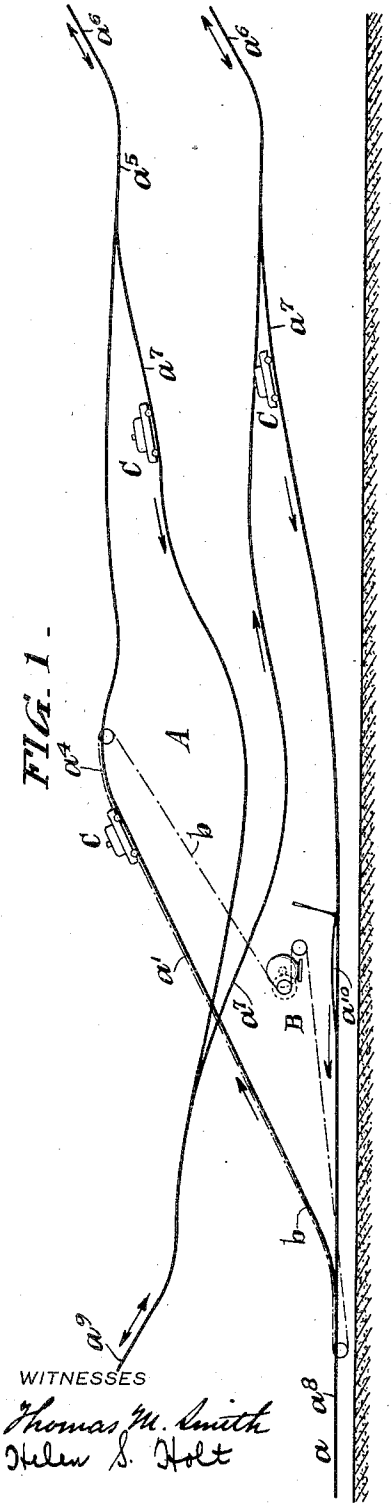
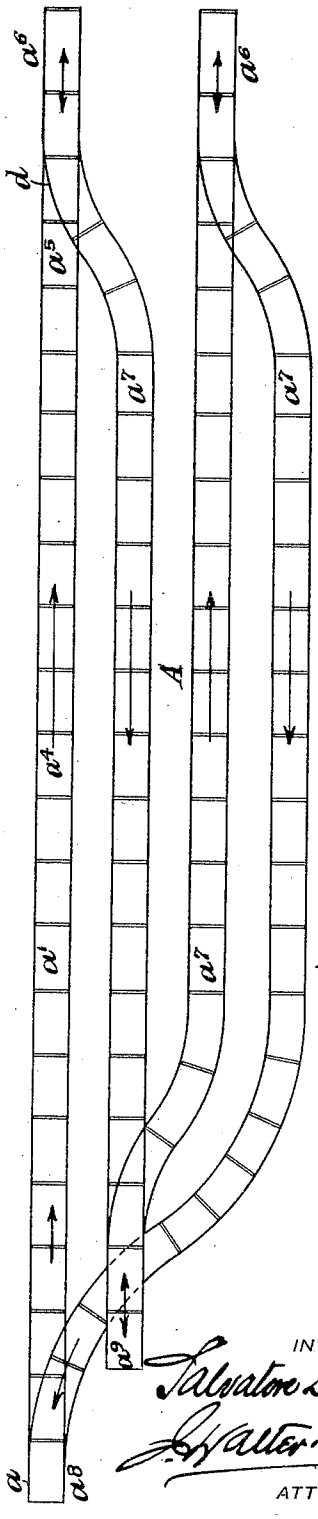


FIG. 2.



WITNESSES

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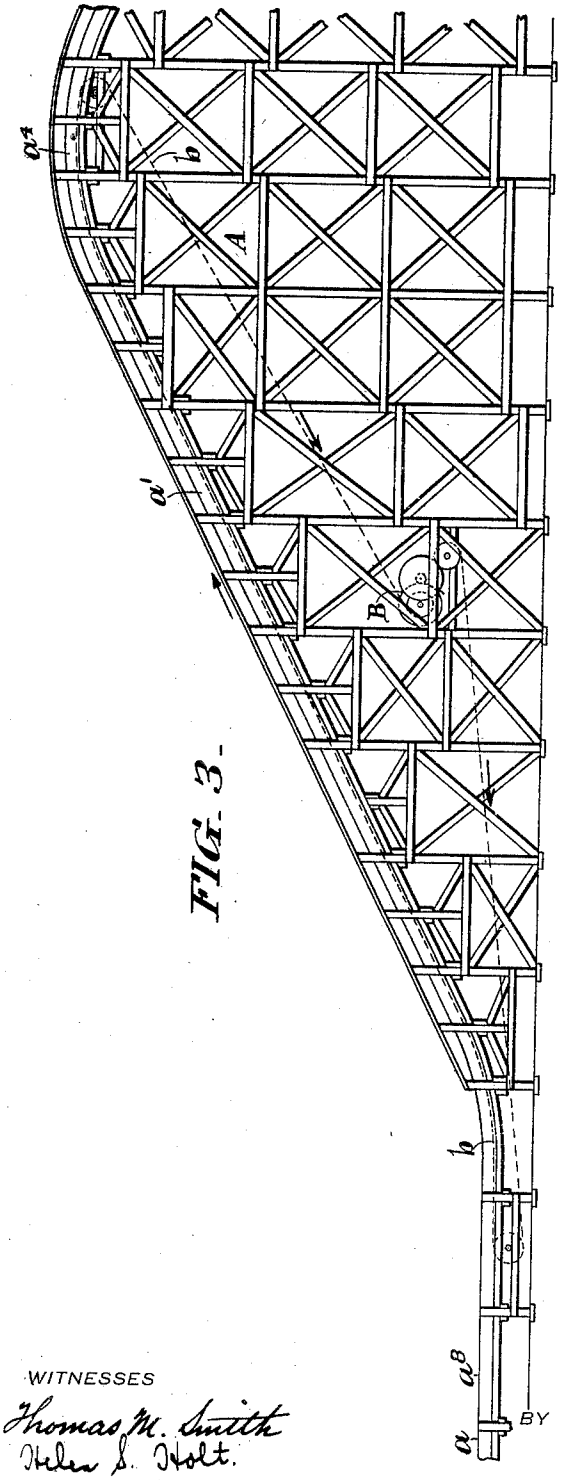

FIG. 3.

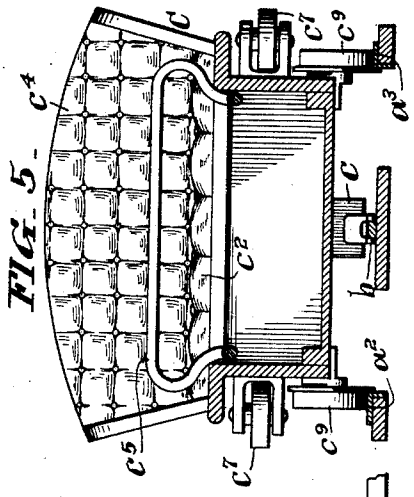

FIG. 5.

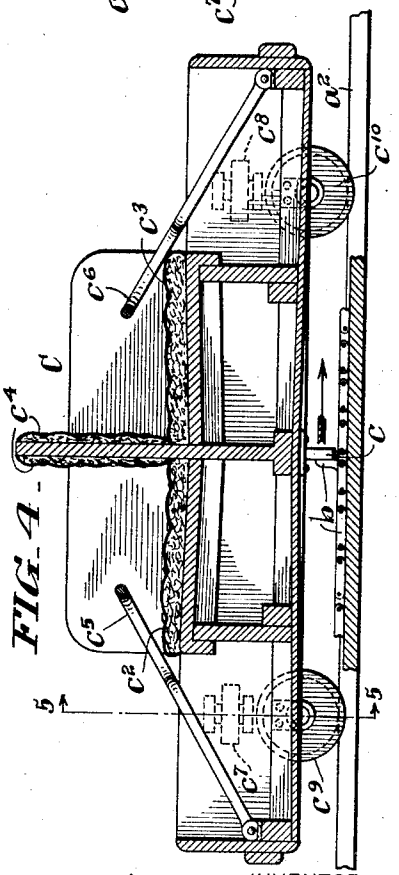

FIG. 4.

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3 SHEETS—SHEET 3.

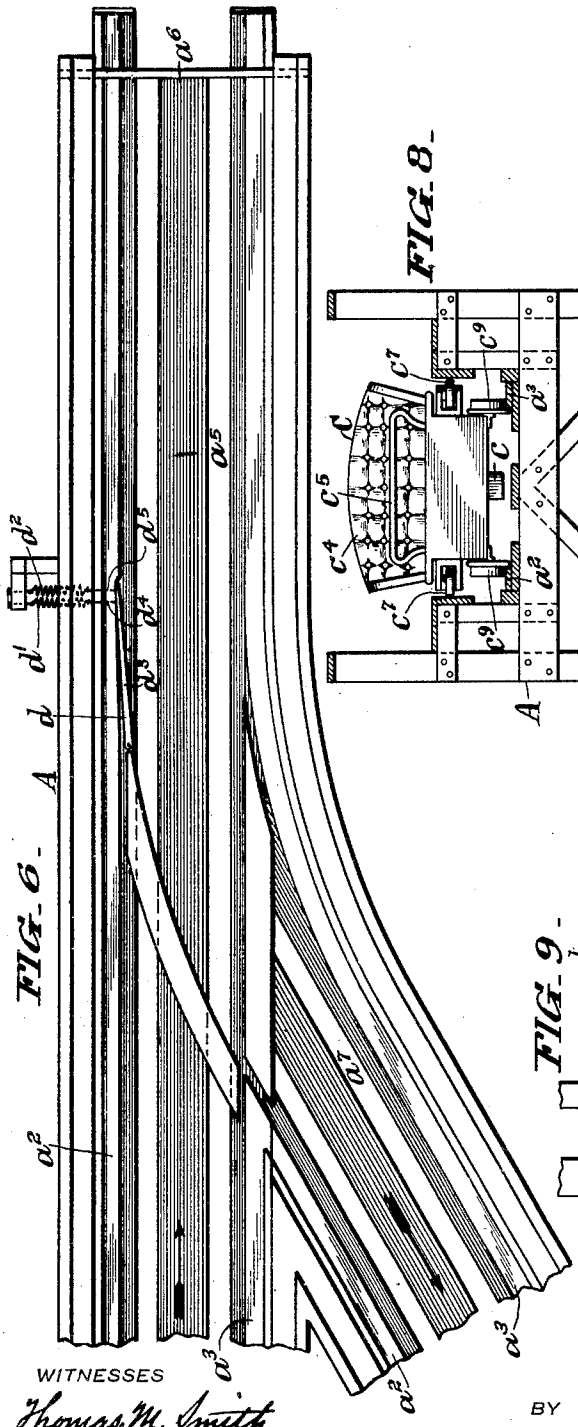

FIG. 6.

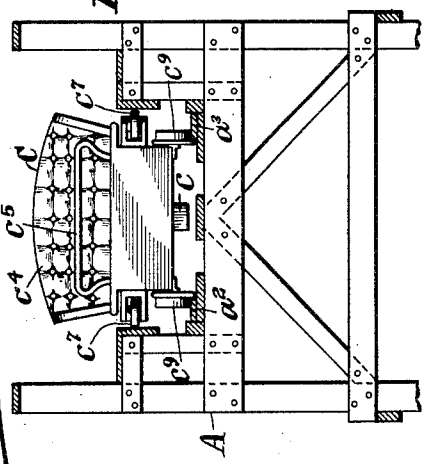

FIG. 8.

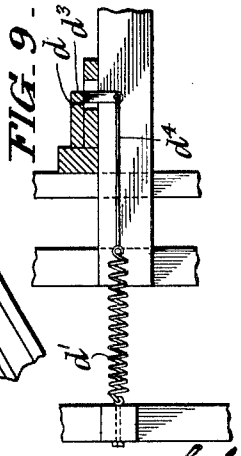

FIG. 9.

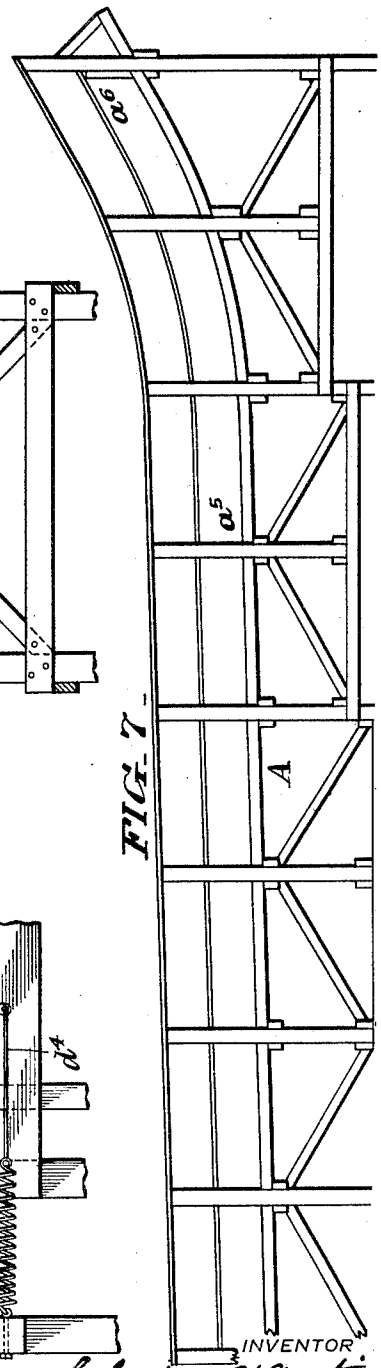

FIG. 7.

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SALVATORE D'AGOSTINO, OF PHILADELPHIA, PENNSYLVANIA.

SWITCHBACK-COASTER.

1,097,615. Specification of Letters Patent. Patented May 26, 1914.

Application filed August 18, 1913. Serial No. 785,346.

To all whom it may concern:

Be it known that I, SALVATORE D'AGOSTINO, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Switchback-Coasters, of which the following is a specification.

My invention has relation to a pleasure railway for amusement parks, sea-side resorts, etc., and in such connection it relates particularly to the arrangement of the same of elevating the cars by power to a summit so as then to permit the car to see-saw back and forth over undulating curvilinear substantially straight courses to the starting point for another trip, the car shifting a switch of each plane automatically to change in returning over an adjacent course to gradual lower planes in sequence by gravity through momentum accumulated in descent to carry the car to near the terminal of each course, to impart a quick acceleration to the car for its return movement over another course of the series of the said structure, after passing the switch and setting automatically the trackway for such descent, until the final terminal point is reached, for starting the car on another trip.

The nature and scope of my present invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which,

Figure 1, is a diagrammatic plan view of a structure, embodying main features, in arrangement, of my present invention, showing a car elevated to a summit of the structure, for it then, to see-saw back and forth by gravity to the terminus of the structure for another trip. Fig. 2, is a top or plan view of the structure, indicating by the arrows the impelling of a car to the summit and the travel then of the same by gravity back and forth over the series of courses to the terminal point, for another trip. Fig. 3, is a side elevational view in broken section of the structure, showing the motive power arranged for elevating a car to the summit of the structure; Fig. 4, is a longitudinal central section through a car adapted for use on such a defined pleasure railway. Fig. 5, is a vertical sectional view of the car on the line 5, 5, of Fig. 4. Fig. 6, is an enlarged top or plan view of one of the end summits of the series of courses of said structure, showing the automatic switch device thereat, controlled by the track-wheels of the car; Fig. 7, is a side elevational view of one of said end summits of the series of the said structure. Fig. 8, is a vertical section through a portion of the structure, showing the car in position engaging flat rails and with side rollers on the car for engaging guide boards of the structure on both sides of the said car to prevent derailment thereof; and Fig. 9, is a side elevational view in detail, of the spring controlled device connected with the tongue of each switch-device, for retracting said tongue, when moved by the car wheels.

Referring to the drawings, the super-structure A, consists of an inclining course a^1, from the starting point at a plane a, and provided with preferably iron or other tracks a^2 and a^3, Fig. 8. The inclining course a^1, between the starting point a, and summit a^4, has arranged between the tracks, a power impelling sprocket-chain mechanism b, for engaging and elevating a car C, to the said summit a^4, whereat automatically the said car is released from the sprocket chain b, by release of the projecting device c, of the car, Figs. 4 and 5, to thus permit the car to descend by gravity accelerated along an inclined structure a^5, to near the terminal a^6 thereof, passing through a switch d, in which after passing the same, by means of coil springs d^1 and d^2, the frog or tongue d^3, of said switch, is retracted to a position in which as the car by gravity from the energy quickly accelerated in mounting the said incline a^6 descends then and passes by the shifted switch-device onto another course a^7, of the structure adjacent to that of the incoming course a^5, from the summit a^4 to thus then see-saw back and forth over succeeding series of courses of the super-structure at lower planes with respect to each other, until the terminal point of the structure A, is reached which is adjacent to and in substantially the same plane with the said starting point a, at which the car is again impelled along the inclining course a^1, to the summit a^4, on another trip.

The tongue d^3, of the switch d, has two rods d^4 and d^5, connected therewith and with the coiled springs d^1 and d^2, which latter are fastened to the road-bed of the structure, whereby, when the flange of the car-wheel has caused the tongue d^3, of the switch d, to be shifted, the coiled springs d^1

and d^2, of the rods d^4 and d^5, connected with the said tongue will draw the tongue against the track-rail, thus automatically permitting the car to be shifted onto an outgoing course from that in which the car came into the section a^6, of the structure and the same action as above taking place at the opposite end of the course a^9, and so on until finally the car has see-sawed back and forth over the series of courses of the structure to the terminal point a^8, of the structure A. Near the terminal point a^8, of the structure are arranged preferably between the tracks or rails of the bed, a well known type of friction device a^{10}, operable preferably manually or automatically, to retard the speed of the incoming car over the final course of the structure to the terminus of the said structure A, as will be readily understood.

The car C, particularly adapted for use on a structure of the character defined, is provided with seats c^2 and c^3, arranged back to back and with a central projection or back c^4, as clearly shown in Fig. 4. The car is provided with gripping devices c^5 and c^6, as clearly illustrated in Figs. 4 and 5, as a protection to persons seated in the cars. The car is also provided on the sides at the front and back with friction rolls c^7 and c^8, Figs. 4 and 5. The track-wheels are preferably flat faced flanged wheels c^9 and c^{10}, Figs. 5 and 8, to travel with as little friction as possible, over the flat iron or similar rails a^2 and a^3, of the superstructure and with an automatic grip or projecting device c, located underneath the car at the back thereof, Figs. 5 and 8, for engaging the sprocket-chain b, of the power impelling mechanism B, of the structure arranged about the inclining portion a^1, to the summit a^4, thereof, as clearly illustrated in Figs. 1 and 3, of the drawings.

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

1. A switch-back coaster, consisting of a series of courses uniting each other in differing planes to form upturned single terminals to impart quick acceleration to the car for its return movements over other courses, and an automatic switch at such junction of said terminals with said courses and actuated by said car.

2. A switch-back coaster, consisting of a series of courses uniting each other in differing planes to form upturned single terminals to impart quick acceleration to the car for its return movements over other courses, an automatic switch at each junction of said terminals with said courses and actuated by said car, one of said courses from the starting point at a ground level formed into an inclining elevation to a summit and directly connecting with one of said terminals and means arranged along said inclining elevation to said summit for mechanically elevating said car to said summit.

3. A switch-back coaster, consisting of a series of courses uniting each other in differing planes to form upturned single terminals to impart quick acceleration to the car for its return movements over other courses and an automatic switch at each junction of said terminals with said courses and actuated by said car provided with means to prevent derailment thereof.

In witness whereof, I have hereunto set my signature in the presence of the two subscribing witnesses hereto.

SALVATORE D'AGOSTINO.

Witnesses:

THOMAS M. SMITH,

HELEN S. HOLT.