No. 716,427. Patented Dec. 23, 1902.

G. L. JONTZ & E. A. GAULT.

ROLLER COASTER.

(Application filed Sept. 24, 1902.)

(No Model.) 2 Sheets—Sheet 1.

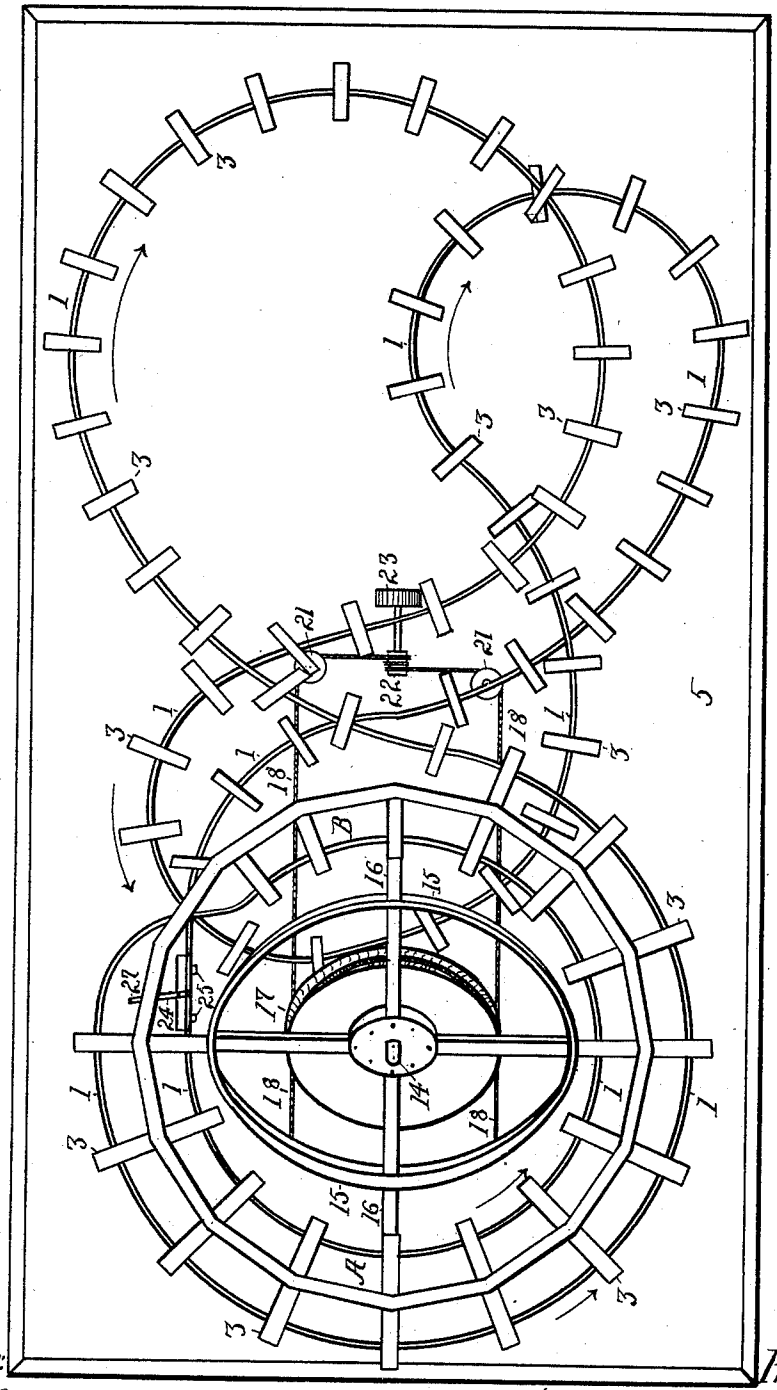

Fig. 1.

Witnesses:
Walter Bowman.
Maude Grisler.

Inventors:
George L. Jontz,
Elmer A. Gault,
by Humphrey & Humphrey, Attorneys.

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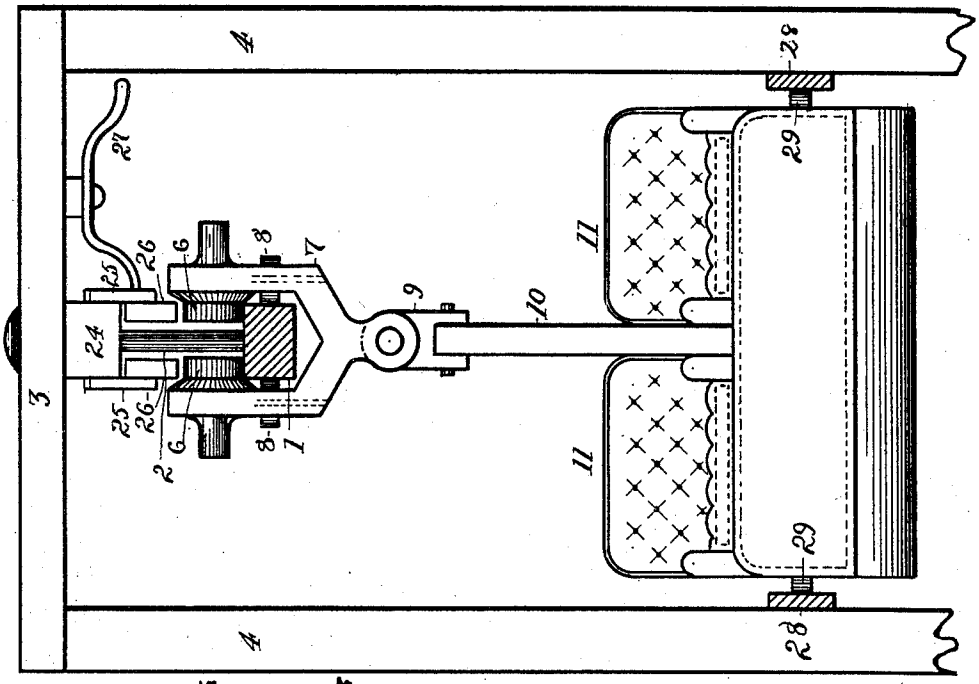

Fig. 3.

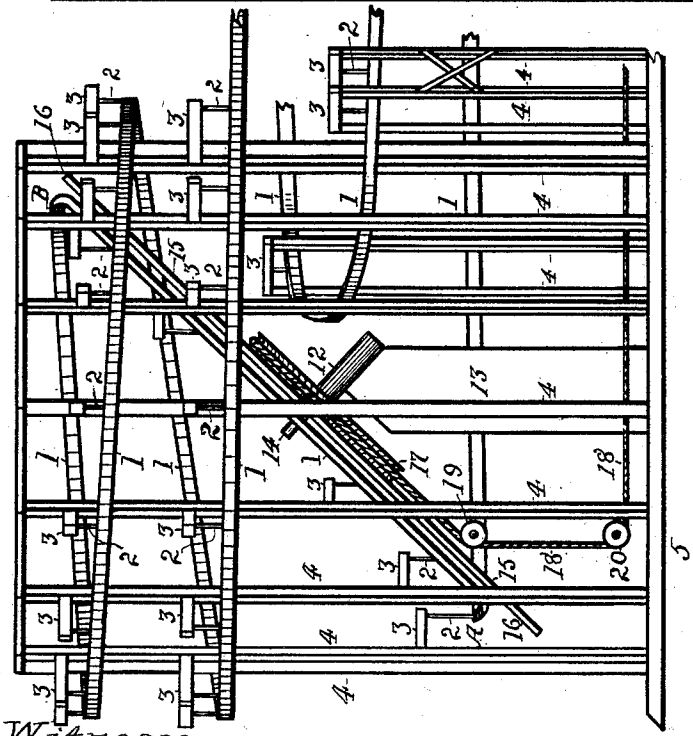

Fig. 2.

Witnesses:
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Inventors:
George L. Jontz,
Elmer A. Gault,
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UNITED STATES PATENT OFFICE.

GEORGE L. JONTZ AND ELMER A. GAULT, OF AKRON, OHIO.

ROLLER-COASTER.

SPECIFICATION forming part of Letters Patent No. 716,427, dated December 23, 1902.

Application filed September 24, 1902. Serial No. 124,644. (No model.)

To all whom it may concern:

Be it known that we, GEORGE L. JONTZ and ELMER A. GAULT, citizens of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Roller-Coasters, of which the following is a complete specification.

Our invention has relation to improvements in that class of devices designed for popular amusement and commonly known as "roller-coasters," which embodies an inclined car-track and a car to run on said track adapted to carry passengers.

The object of our invention is to produce a new and improved device of the class named that will embody a track of peculiar construction, a car specially adapted to run on said track, mechanism to be operated by a motor to force the car to the highest or starting point on the track, and a brake connected with the track to arrest the movement of the car when it shall have completed its trip; and a special object of our invention is to so construct the device as to prevent accident or injury to its patrons.

To the accomplishment of the aforesaid object our invention consists in the peculiar and novel construction, arrangement, and combination of parts, hereinafter described, and then specifically pointed out in the claims, reference being had to the accompanying drawings, forming a part hereof.

In the accompanying drawings, in which similar reference characters indicate like parts in the different figures, Figure 1 is a plan of our improved track, illustrating the location and general construction of the car-elevating device and the brake, with a preferred arrangement of the convolutions; Fig. 2, an elevation of the left half of the track looking from the right of Fig. 1 and showing an edge elevation of the car-elevating device, with its driving-rope; and Fig. 3, a section of the track, with its supports, on an enlarged scale, at the brake, showing the brake with its operating means and the car with its wheels and support.

Referring to the figures, 1 is the track, which consists of a square continuous endless rail suspended at intervals by rods or bolts 2 from horizontal arms 3, projecting from vertical posts 4 or supported thereby. In some parts of the structure these arms will project from one side of the posts, as shown at the left of Fig. 2, and this is a preferred form of construction in rounding curves, where the car might swing outward by centrifugal force and strike an opposite post, and in other parts of the structure there are two opposite posts, with the arms uniting their tops, as appears in Fig. 3 and at the right of Fig. 2. The posts 4 preferably stand on or are secured in a floor 5, of wood or cement, as may be preferred. The lowest portion of the track is at the point A, whence it rises at a sharp grade to the highest point B, whence it descends with an even grade in a spiral around the left portion of the structure, thence in a reverse curve around the right portion of the structure, and in this manner back toward the left portion and again to the right portion in alternate reverse curves until it reaches and connects at the starting-point. The object of these convolutions of the track, instead of making a circle or an ellipse, is twofold—first, it enables a track of great length (and thus affording a long ride) to be contained within the limits of a building, and, second, the different turns and windings of the car in following the track will afford greater diversion and amusement to the occupants of the car than if a simple circle or ellipse was used as the line for the track, and as the device is intended for the amusement of spectators as well as passengers, in roof-gardens and like places of amusement, it will present a more attractive spectacle than if the simpler line of tracks was adopted. The car to run upon this track consists of two oppositely-disposed vertical wheels 6, (see Fig. 3,) journaled in the arms of a fork 7, so arranged as to bear on the upper face of the track, but separated sufficiently to avoid contact with the bolts or rods 2. In this same fork below the wheels 6 are two oppositely-disposed horizontal wheels between the upper wheels 8, that bear against the side of the track, and thus resist lateral thrust from centrifugal motion of the car. Hinged to the fork 7 to swing transverse to the line of the track is an intermediate member 9, in the lower end of which is hinged to swing length-

wise of the track a bar 10, that supports the car 11. This car has a seat with a back and a dashboard to protect the lower portions of the occupants from the force of the air due to the velocity of the car. The seat and back of the car may be upholstered in such manner as may be desired, but has side arms for greater security of the passengers.

To elevate the car from the lowest level of the track to the highest to prepare it for its trip, there is journaled in a bearing 12 on a support 13 a shaft 14, resting at an angle of approximately forty-five degrees with the floor, on which is mounted a wheel 15, having radial arms 16 of such length and so located as to engage the back of the car a short distance after it shall have passed the lowest level of the track and while ascending and until it reaches the highest portion in the first curve thereof from said lowest level and being power driven to force the car to ascend to said highest level. Motion may be communicated to this wheel by any of the well-known means; but a preferred method is, as shown in the drawings, by fixing to the shaft 14 a grooved pulley 17, on which runs a cable-belt that passes over guide-pulleys 19 20 on each side in front of the pulley 17 and thence backward toward the center of the machine around pulleys 21 to a winding-drum 22 on a shaft provided with a pulley 23. Motion can be communicated to the pulley 23 from any convenient or desired source of power.

In operation the wheel 15 is constantly in motion, but passes below and does not engage the car when the latter is at the lowest level of the track. The passengers enter the car when it is at rest at the lowest level of the track, and the car is then pushed by an attendant along the track in the direction of the arrow in Fig. 1 until one of the radial arms 16 engages it, and it is then carried along the track by said arm until it reaches the highest elevation of the track and passes beyond the reach of said arms and commences its trip along the descending part of the track.

To arrest the motion of the car when it has substantially completed its trip and nearly reached the lower part of the track there is provided a brake, the location of which is shown in Fig. 1 and its enlarged structure in Fig. 3. A bar 24 is secured lengthwise above the track to one of the horizontal arms 3, to the opposite sides of which are pivotally secured pairs of swinging links 25, the pair on each side being pivoted to brake-blocks 26. The links 25 and brake-blocks are so adjusted as that the latter will press firmly on the wheels 8 when the links hang vertically, but will rise to freely clear the wheels when the links are rocked in either direction.

To operate the brake, a lever 27 is pivoted to one of the arms 3, with one end connected with one of the brake-blocks 26 and the other extended outward to form a handle. Each oppositely-disposed pair of links are by means of their pivot arranged to swing in unison. Thus when the track is to be kept clear the brake-blocks are swung upward, but when it is desired to stop the car at the brake they are allowed to hang down. In this position they engage the wheels 8 and lock them, thus arresting the car, the shock of stopping being relieved by the flexible nature of the car-support, and thus the unpleasant jar to the passenger avoided.

As an additional safeguard to prevent the car encountering the posts 4 when swung outward by centrifugal force from great speed in rounding curves there is placed along the posts 4, on each side continuous guard-rails 28, as shown in Fig. 3, and on each side of the car 11 rollers 29, arranged to run on these rails and thus act as fenders for the car.

Although we have only shown one pair of rollers 6, it is not our intention to thus limit our invention, as in some instances a preferred construction would be to have two pairs of rollers 6, in which case the rollers 8 can be conveniently arranged vertically between them; but as this is only a modification it has not been shown in the drawings.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. An improved amusement device of the class named consisting of an upright supporting skeleton framework, an endless track consisting of a single bar supported at intervals by central rods arranged spirally within said upright framework, said track being inclined abruptly from its lowest point to its highest point within said skeleton framework passing through from the interior of said framework through the sides thereof and around its exterior and from thence through various convolutions with a gradual descent and finally terminating within said framework at its lowest point, said track being adapted to carry a car, substantially as shown and described.

2. An improved amusement device of the class named consisting of an upright skeleton framework, an endless track supported at intervals by central rods within said framework having an abrupt inclination spirally within said framework and passing with its highest portion through the sides of said framework and thence repeatedly around the exterior of said framework and from thence with various convolutions to the lowest point in said framework in combination with an elevating-wheel provided with radial arms arranged to revolve on an incline substantially equal to the track within said framework, means to revolve said wheel to raise said car up said incline, a brake situated in the track adjacent to said framework to arrest the motion of said car previous to its ascent, substantially as shown and described.

3. An improved amusement device of the class named, consisting of an upright skeleton framework, a spirally-arranged track within said framework having an abrupt grade with-

in said framework and extending from the interior of said framework outwardly with various convolutions in its contour and returning to the bottom of said framework, and capable of supporting a car, in combination with an inclined wheel provided with radial arms capable of raising a car supported by said track from the lowest point in said track to the highest within said framework, and means to revolve said elevating-wheel, substantially as shown and described.

4. An improved amusement device of the class designed consisting of an endless track having a highest and lowest portion, said portions being inclosed by an upright skeleton framework, the portion included between the highest and lowest portions within said framework being arranged spirally around the interior of said framework and adapted to be supported thereby, the supports for said track consisting of central depending rods from said framework, said track being arranged to extend through said framework and pass around the exterior thereof, and from thence through various convolutions to the lower part of said framework, a brake provided in the lower parts of said track to arrest the motion of a car on said track in combination with a slanting wheel having a series of radial arms to pass in close proximity to the inclined spiral track within said framework, and a car suspended from a carriage arranged to run on said track, and means to cause the rotation of said wheel and cause its radial arms to encounter the rear portion of said carriage and raise said carriage from its lowest to its highest point within said framework, substantially as shown and described.

5. An improved amusement device of the class named embodying an endless track consisting of an endless bar supported at intervals having an upper face adapted to receive oppositely-disposed wheels, in combination with a car with a supporting-bar bearing one set of wheels adapted to run on the upper face of said track, and a second set arranged to run on the sides of said track, substantially as shown and described.

6. The combination in an amusement device embodying an endless track consisting of an endless bar supported at intervals having an upper face adapted to receive oppositely-disposed wheels; and a car having wheels adapted to run in said track, of brake mechanism connected with said track, consisting of brake-blocks suspended on swinging arms arranged to rock above said wheels and to encounter them when lowered, and means, such substantially as shown for rocking said arms, substantially as shown and described.

7. An improved car for tracks embodying a continuous suspended bar, which consists of a yoke having oppositely-disposed vertical wheels to run on the upper face of said tracks; oppositely-disposed horizontal wheels to run on the sides of said track, a swinging member pivotally suspended to swing transverse to said track, and an arm with a body having conveniences for passengers pivotally connected with said member, substantially as shown and described.

In testimony that we claim the above we hereunto set our hands in the presence of two subscribing witnesses.

GEORGE L. JONTZ.
ELMER A. GAULT.

In presence of—
C. P. HUMPHREY,
C. E. HUMPHREY.