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AMUSEMENT DEVICE.

APPLICATION FILED DEC. 3, 1921.

1,433,135.

Patented Oct. 24, 1922.

2 SHEETS—SHEET 1.

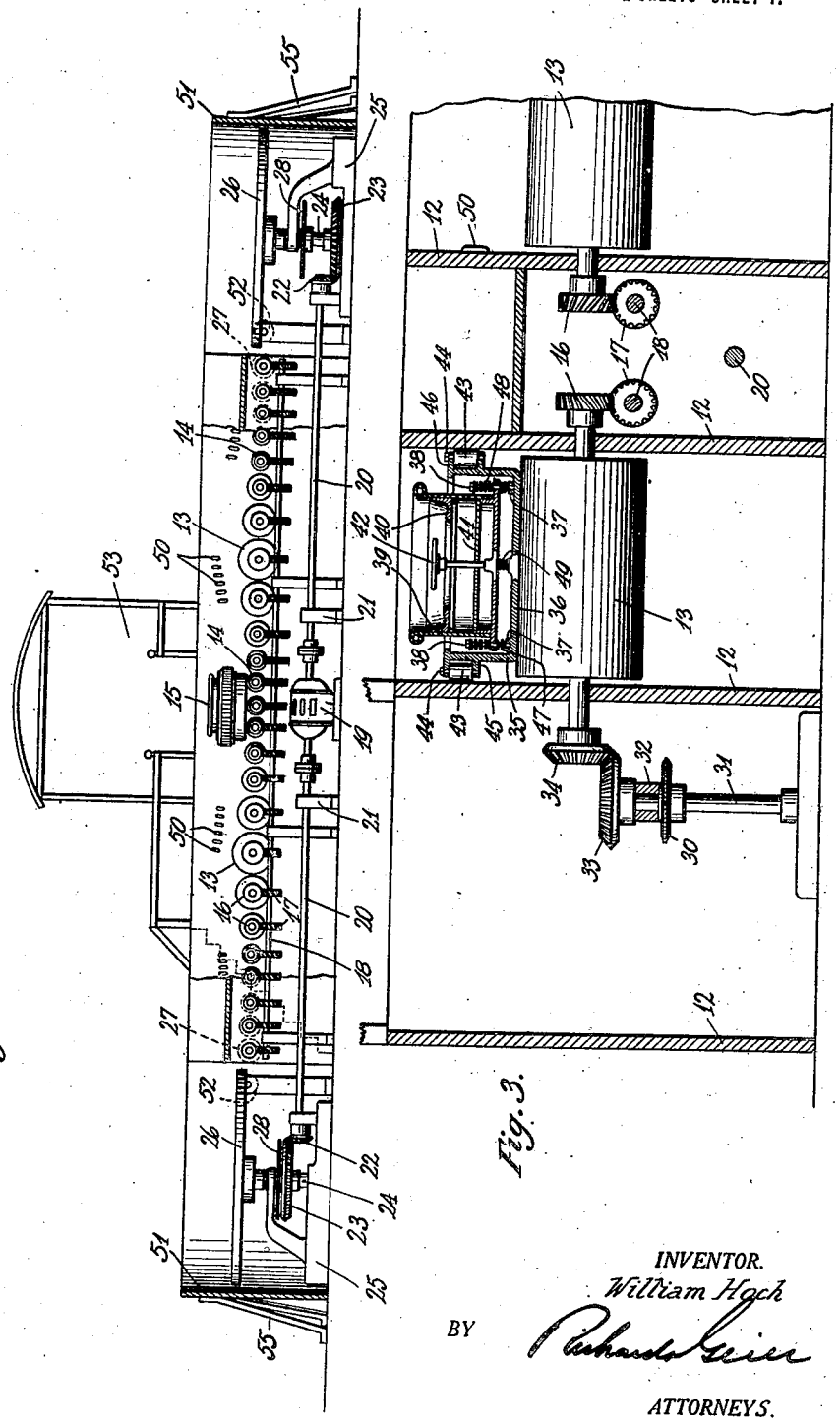

Fig. 1.

Fig. 3.

INVENTOR.
William Hoch
BY
ATTORNEYS.

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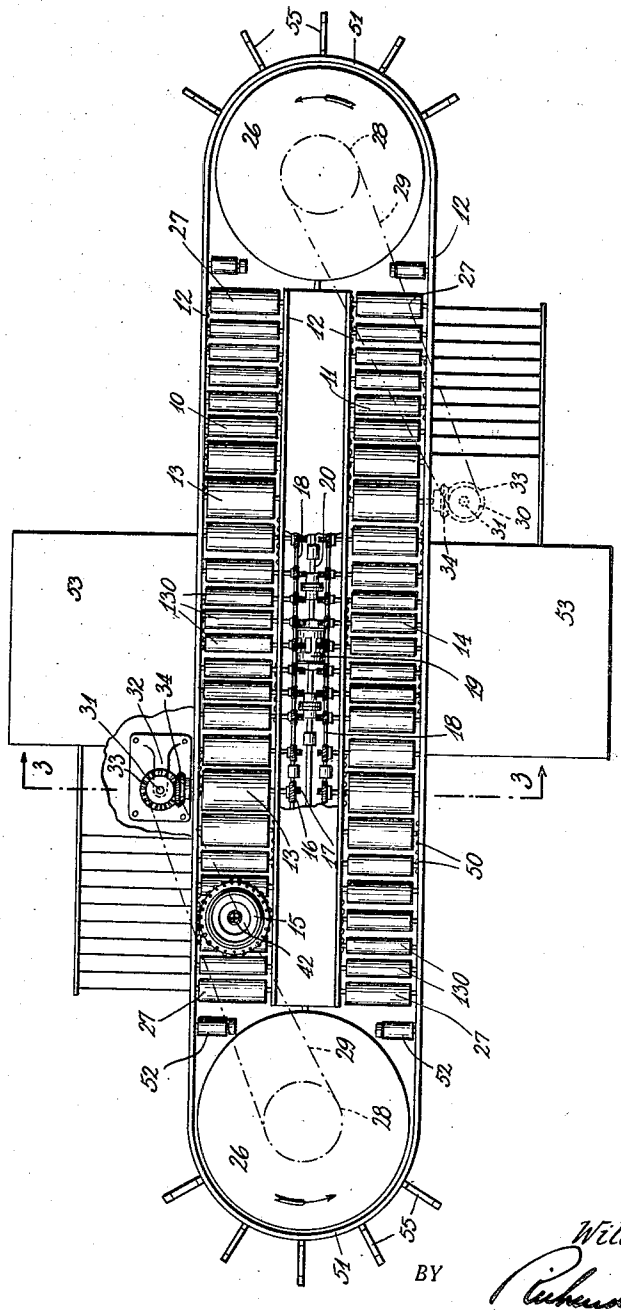

Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM HOCH, OF NEW YORK, N. Y.

AMUSEMENT DEVICE.

Application filed December 3, 1921. Serial No. 519,579.

To all whom it may concern:

Be it known that I, WILLIAM HOCH, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification.

The principal object of this invention is to devise a new and improved amusement device having a passenger carrying car which is transported over and around a raceway which is provided with means to produce a plurality of different motions to the car and thus impart novel and thrilling sensations to the passenger.

Another object is to provide an amusement device that can be constructed at a relatively small cost, which will not require the services of a great number of operators and which may be operated with a low cost of maintenance and upkeep.

For the accomplishment of these and such further objects as will hereinafter be apparent to those skilled in the art to which it appertains, the invention consists in the following construction, combination and arrangement of parts herein specifically described and illustrated in the accompanying drawings wherein is shown a preferred embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the claims hereunto appended. In the drawings forming a portion of this specification:

Fig. 1 is a longitudinal sectional view of my amusement device.

Fig. 2 is a plan view of the device and

Fig. 3 is a transverse section through the machine taken on the line 3—3 of Fig. 2.

As shown in the drawings, the numerals 10 and 11 indicate a pair of longitudinally extending parallel spaced apart raceways, each comprising a pair of lateral retaining walls 12 in which are journaled a plurality of rollers indicated generally by the numeral 130 progressively decreasing in diameter from each side of the rollers 13 to the rollers 14 to provide an undulating pathway for a car 15 which is adapted to travel along and be driven by said rollers. Each of the rollers is provided with a skew gear 16 adapted to mesh with and be driven by a cooperating skew gear 17 mounted on and driven by a longitudinally extending shaft 18. A pair of said shafts are situated in the space between the raceways, one for each raceway and a plurality of gears 17 are mounted on said shafts one for each roller. The ratio between the each respective pair of gears 16 and 17 is so proportioned that all of the rollers will be driven at the same surface or peripheral velocity.

A main drive shaft 20 mounted in brackets 21, extends longitudinally intermediate of the space between the raceways and is driven by any suitable means such as the motor 19. Secured to each end of the main shaft 20 is a bevel pinion 22 which meshes with and drives a bevel gear 23 on the lower end of a vertical shaft 24 mounted in suitable bearing brackets 25 located adjacent but midway between the ends of the raceways 10, 11. Carried by the upper end of each of the shafts 23 is a circular horizontal platform 26 the top of which is in horizontal alignment with the top of the end rollers 27 of the raceway.

Each of the shafts 23 adjacent the gear 24 carries a sprocket wheel 28 which drives a chain 29 which is trained around and drives a sprocket 30 carried by a vertical shaft 31 journaled in a suitable bracket 32. Carried by the upper end of the shaft 31 is a bevel gear 33 which meshes with a gear 34 carried by the roller 13.

The car 15 consists of an open topped carrier 35 of circular shape having a substantially flat bottom 36 provided with a plurality of upwardly projecting bosses 37 into each of which is threaded a bolt 38 which passes upwardly through suitable apertures in the base of a passenger carrying body 39, said body being provided with a seat 40, a foot plate 41 and a hand rail 42. Adjacent the top of the carrier 35 a plurality of rollers 43 are rotatably mounted as by means of the bolts 44 which are secured in a suitable flange 45 projecting from the side of the carrier and which bolts also serve to secure an annular guard ring 46 to the top of the carrier, the guard ring serving to hold the rollers in place and to fill up the space between the sides of the body and carrier.

Mounted on each of the bolts 38 between the carrier and body is a spring 47 while between the head of the bolt and the body a second spring 48 is placed while an additional spring 49 may be placed in the center of the car between the carrier and body.

Along the opposed faces of the sides 12

of each of the raceways a plurality of cleats 50 arranged in series in staggered relation are preferably provided, said cleats being placed at a suitable height to engage between the peripheries of the rollers 43 mounted on the car for a purpose which will hereinafter appear. The outer sides 12 of the raceways 10, 11 are connected at their ends by an arcuate section 51 suitably braced as at 55 and additional idler rolls such as shown at 52 may be provided between the platform 26 and the rollers 27.

Suitable loading and unloading platforms 53 may be provided adjacent and intermediate the ends of the raceways.

The operation of the device is as follows, the car 15 being placed upon the raceway 10, the motor 19 is started in operation driving the main shaft 20 which through the gears 22, 24, rotates the platform 26, and through the sprockets 28 and 30, chain 29 and gears 33, 34 drives the rollers 13. Rotation of the rollers 13 by means of its skew gear 16 rotates the shaft 18 thus driving each of the transverse rollers 130 through the medium of the spur gears 16—17. The rotation of the rollers 130 causes the car 15 to be moved along the raceway being guided by the sides 12, while the cleats 50 engaging the sides of the car will cause the car to be held against movement first on one side and then on the other thus imparting an oscillating or alternating rotary motion to the car in a horizontal plane as will be obvious. Due to the different sizes of the rollers the car will be given an oscillating wave like motion in a vertical plane as it travels along the raceway. Reaching the end of the raceway the car passes onto the platform 26 by which it is whirled around and deposited upon the raceway 11 along which it travels with an alternating rotation in the horizontal plane while it is simultaneously receiving an oscillation in the vertical plane, until the opposite platform 26 is reached and by which it is returned to the raceway 10.

It will be understood that suitable idler rolls may be interposed between the rollers 130 wherever desired and that the rollers instead of being made of different diameters could be all of the same diameter but arranged with their centres at different vertical heights.

It will also be understood that the rollers 130 may be of sufficient width and the sidewalls spaced apart so to allow one car to pass another in travelling around the raceways. Furthermore the rollers may be tapered and arranged in series with the wider ends at opposite sides of the raceway to secure the alternate rotary movement of the cars.

Claims:

1. In an amusement device the combination with a raceway, of a car adapted to travel along said raceway, said raceway comprising means to impart an undulating oscillation to said car in a vertical plane and means to simultaneously oscillate said car in a horizontal plane.

2. In an amusement device, the combination with a pair of parallel raceways, a car adapted to travel along said raceways, means located adjacent the ends of the raceways to transfer said car from one raceway to the other, and said raceway comprising means to oscillate said car in a vertical plane.

3. In an amusement device, the combination with a pair of parallel raceways, a car adapted to travel along said raceways, means located adjacent the ends of the raceways to transfer said car from one raceway to the other, and said raceway comprising means to oscillate said car in a vertical plane, and means to oscillate said car in a horizontal plane.

4. In an amusement device, the combination with a raceway of a car adapted to travel along said raceway, said raceway comprising a plurality of transversely arranged parallel rollers, the tops of said rollers lying at different vertical heights to impart an undulating oscillation to said car in a vertical plane.

5. In an amusement device, the combination with a raceway, of a car adapted to travel along said raceway, said raceway comprising a plurality of transversely arranged parallel rollers, the tops of said rollers lying at different vertical heights to impart an undulating oscillation to said car in a vertical plane, and means to impart an alternating rotary movement to said car.

6. In an amusement device, the combination with a raceway, of a car adapted to travel along said raceway, said raceway comprising a plurality of transversely arranged parallel rollers, the tops of said rollers lying at different vertical heights to impart an undulating oscillation to said car in a vertical plane, and means to engage the sides of said car adapted to impart an alternating rotary movement to said car.

7. In an amusement device, the combination with a car, of a raceway comprising a plurality of transversely parallel rollers of varying diameters, said rollers arranged in series of progressively increasing and decreasing diameters whereby a vertically undulating path for said car is provided.

8. In an amusement device, the combination with a car, of a raceway comprising a plurality of transversely parallel rollers of varying diameters, said rollers arranged in series of progressively increasing and decreasing diameters whereby a vertically undulating path for said car is provided, and means arranged in staggered relation adjacent the opposite ends of said rollers

adapted to engage the sides of said car to impart an alternating rotary motion to said car.

9. In an amusement device, a pair of parallel raceways, a car adapted to travel along said raceways, said raceways having means to impart an oscillating motion to said car, means located adjacent the ends of the raceways to transfer said car from one raceway to another comprising a horizontal circular platform at each end and means to rotate said platforms.

10. In an amusement device, a pair of juxtaposed parallel raceways each comprising a plurality of transverse parallel rollers of varying diameters, said rollers arranged in series of progressively increasing and decreasing diameters, means to rotate said rollers, a car adapted to travel along and be driven by said rollers, a circular horizontal platform adjacent each end of said raceways adapted to transfer said car from one raceway to the other and means to rotate said platforms.

11. In an amusement device, a pair of juxtaposed parallel raceways each comprising a plurality of transverse parallel rollers of different diameters, said rollers arranged in series of progressively increasing and decreasing diameters, longitudinally extending shaft adjacent each raceway, transmission gears between said shaft and adjacent rollers, a car adapted to travel along and be driven by said rollers, a horizontal circular platform adjacent each end of said raceways adapted to transfer said car from one raceway to the other and means to rotate said platforms.

12. In an amusement device, the combination with a raceway of car adapted to travel along said raceway, said raceway comprising means to oscillate said car in a vertical plane and means to simultaneously oscillate said car in a horizontal plane, said raceway provided with lateral upwardly extending retaining walls and said car provided with a plurality of antifriction rollers to engage said walls.

Signed at New York, in the county of New York and State of New York, this 23 day of November, A. D. 1921.

WILLIAM HOCH.