J. STANLEY.

AMUSEMENT DEVICE.

APPLICATION FILED JUNE 25, 1918.

1,290,392.

Patented Jan. 7, 1919.

2 SHEETS—SHEET 1.

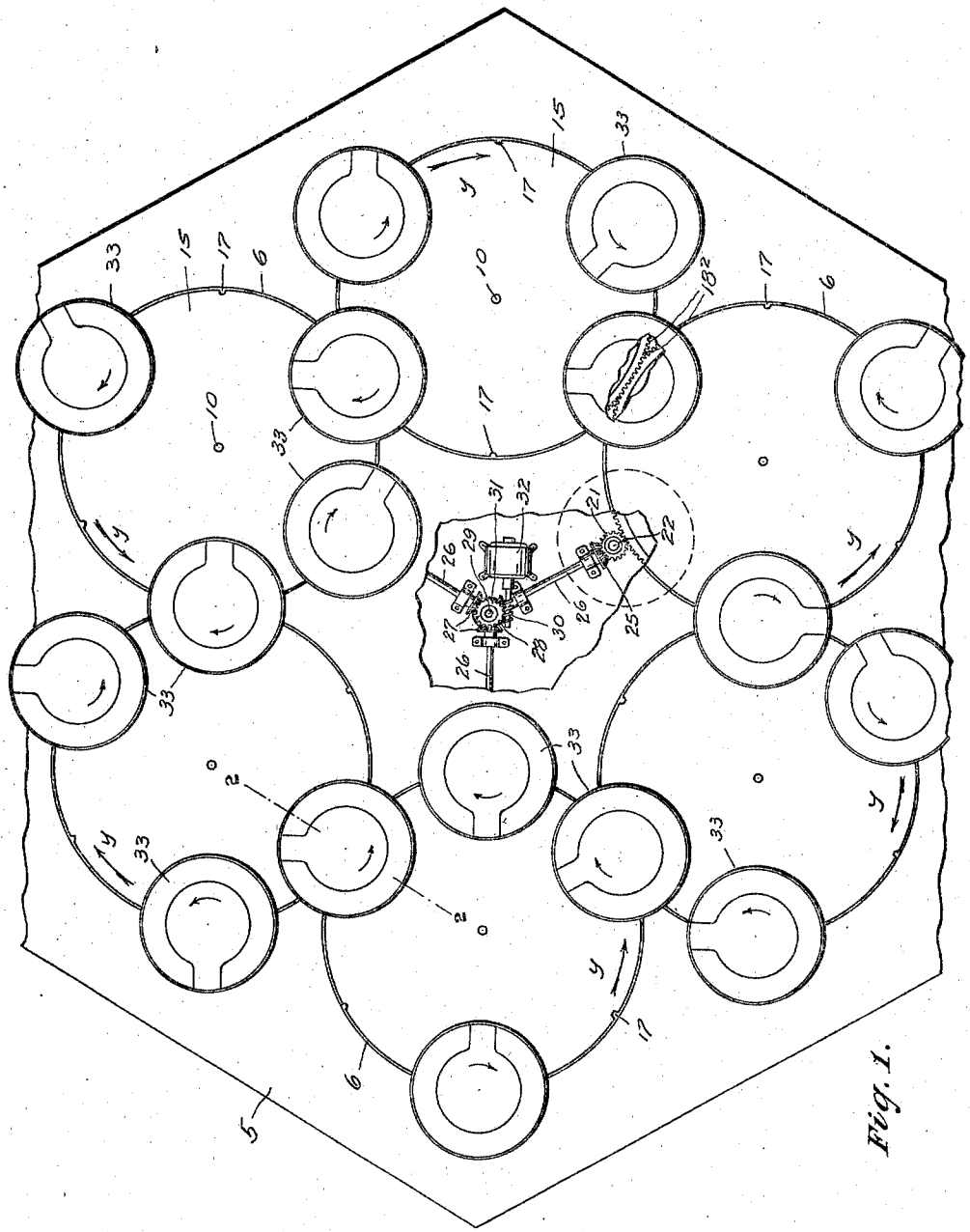

Fig. 1.

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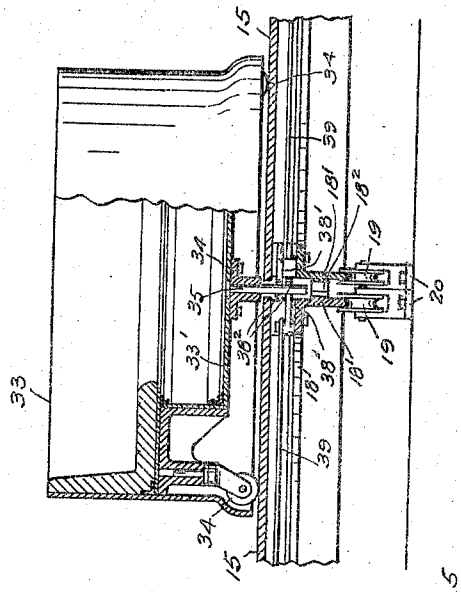

Fig. 2.

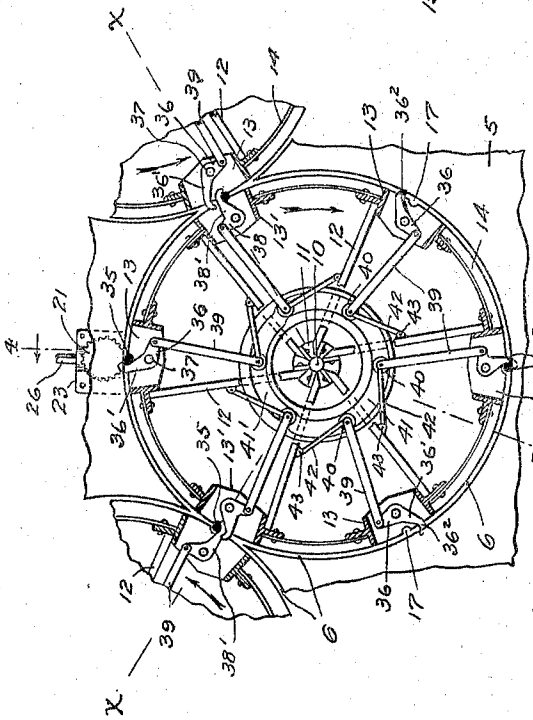

Fig. 3.

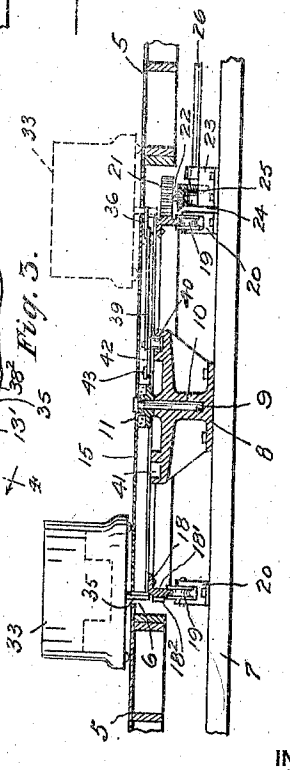

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN STANLEY, OF SEATTLE, WASHINGTON.

AMUSEMENT DEVICE.

1,290,392. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed June 25, 1918. Serial No. 241,788.

To all whom it may concern:

Be it known that I, JOHN STANLEY, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification.

This invention relates to amusement devices and particularly to improvements in the devices illustrated and described in U. S. Patent No. 1,165,552 issued Dec. 28, 1915, to myself and James C. Porter.

The object of the present invention is the provision of improved means for effecting the transfer between the various rotary disks of the cars with an absence of shocks and with a minimum of friction.

A further object of the invention is to simplify and reduce the cost of construction of the device, and generally, to improve its efficiency and effectiveness for amusement purposes.

The invention consists in the novel construction, adaptation and combination of parts as will be hereinafter described and claimed.

In the accompanying drawings,

Figure 1 is a plan view of my improved amusement device. Fig. 2 is a sectional view through 2—2 of Fig. 1, the car being shown partly in elevation. Fig. 3 is a detail horizontal sectional view to illustrate the car propelling and transferring mechanisms. Fig. 4 is a vertical sectional view through 4—4 of Fig. 3 and including elements above the plane on which Fig. 3 is taken.

In said drawings, the reference numeral 5 indicates a platform provided with a plurality of tangentially arranged circular openings 6. Rigidly secured to framework 7, subjacent to said platform and centrally of each of the openings 6, is a casting 8 provided with a socket 9 (Fig. 4) for an upright pin 10 which serves as a pivot for a horizontal wheel.

Each of said wheels is formed with a hub 11 connected by radially disposed spokes 12 with a rim comprised of rigidly connected circumferentially spaced frames 13, 13^1 and tie-plates 14. Secured to the upper side of and constituting a part of each wheel is a disk 15 whose top surface is in a plane with the top surface of said platform, said disk being of less diameter than the respective platform opening to afford an annular slot about the disk. Provided in the peripheries of said disks and in their respective frames 13, 13^1 are notches 17 of substantially semicircular forms. To the under side of each of said wheels is secured a ring 18 having a downwardly directed flange 18^1 engaging in the peripheral grooves of supporting rollers 19 having axles journaled in chairs 20 secured to the framework 7.

Provided on the outer sides of flanges 18^1 is a circular toothed rack 18^2 in mesh with correspondingly arranged racks on the adjacent of said wheels so that when rotated the alternate wheels will be caused to rotate in opposite directions.

Engaging the racks 18^2 of the alternate wheels, preferably, are spur pinions 21 which are mounted on upright stub shafts 22 having foot bearings in blocks, such as 23, Fig. 4. Also mounted on shafts 22 are bevel toothed gears 24 engaged by bevel gears 25 provided on ends of horizontal shafts 26 which are driven through the medium of bevel toothed gears 27 on the other ends of shafts 26 by a master gear 28.

The last named gear is mounted on an upright shaft 29 disposed in concentric relations with respect to the axes of the aforesaid wheels and is driven, as by means of a worm 30 and gear 31 from the armature shaft of an electric motor 32.

33 represents cars, preferably of circular shapes, which are each supported in proximity to its periphery by means of casters 34 tracking on the platform 5 and wheel disks 15.

Secured, as by a socket attachment 34, to the floor 33^1 of each car is a spindle 35 disposed axially of the car and extending downwardly through the wheel notches 17.

Provided in the alternate frames 13, of each wheel see Fig. 3, are levers having arms 36 and 36^1 at opposite sides of the fulcrum pins 37.

In the other frames 13^1 are provided bell-crank levers having their arms 38 and 38^1 arranged in approximately rectangular relations with each other. The arms 36^1 and 38^1 of said levers terminate in hooks 36^2 and 38^2 for releasably engaging the car spindles 35. The other arms 36 and 38 of the respective levers are connected by rods 39 with rollers 40 operating in a cam groove provided in the respective castings 8.

Each of said cam grooves comprises two arcuate portions 41 and 41^1 of different radii and concentric to the axis of the associated

wheel; the cam portion 41 of smaller radius being located at the inner side of a wheel adjacent to the axis of all of the wheels and of a circumferential length equal to the arc between radial lines, as x—x Fig. 3, extending from the axis of a cam, or wheel, to the centers of the adjacent wheels.

The rods 39 are connected in proximity to the rollers 40 by means of links 42 to pivotal pins 43 provided on wheel spokes 12 so that the rollers will be revolubly carried with the wheels while being affected by the cams.

In operation, said wheels are rotated through the agency of the aforedescribed mechanism in the directions indicated by arrows y in Fig. 1 thereby propelling the cars 33 whose spindles are engaged in the wheel notches 17 and by the hooked levers 36—36^1 or 38—38^1. The cars are revolubly carried by the various wheels until reaching the points of tangency between the latter, whereupon the opposing levers of the adjacent wheels are simultaneously influenced by the associated cams to cause the levers of the carrying wheels to release the car spindles simultaneously with the grasping of the spindles by the hooks of the levers of the adjacent wheels to thereby transfer the spindles from the notches of one wheel to those of another. By thus transferring them among the various wheels, the cars partake of orbital movements of the respective wheels and assume curvilinear courses with a weaving-like movement with respect to each other.

In revolving with the various wheels, the spindles are engaged by the lever hooks to prevent their leaving the respective notches 17 against the action of centrifugal force. The cars, moreover, by being supported by their casters at diametrically opposite sides either upon disks rotating in opposite directions or upon rotating disks and a stationary platform, will be caused to rotate about the axes of the car spindles 10 during their curvilinear courses.

The construction of the invention will, it is thought, be understood from the foregoing description.

What I claim is—

1. In apparatus of the class described, the combination of tangentially arranged wheels provided with peripheral notches, car-carrying spindles engageable in said notches for propelling said spindles, non-rotatable cams for the respective wheels, hooked devices, and means actuated by said cams whereby said spindles are transferred from the notches of one wheel to notches of another.

2. In apparatus of the class described, a car-carrying spindle, wheels arranged in tangental relation and provided with peripheral notches to receive said spindle, cams for the respective wheels, and means actuated by said cams whereby said spindle is transferred at the points of the wheel's tangency from a notch in one wheel into a notch in another of said wheels.

3. In apparatus of the class described, the combination with a plurality of tangentially arranged wheels provided with notches in their peripheries, means to rotate said wheels, a plurality of cars, and a spindle extending axially downward from each of said cars, of hooked levers carried by said wheels, a cam provided subjacent to each of said wheels, and means regulated by said cams during the rotation of the wheels whereby said hooked levers are influenced to coöperate with the wheel notches in carrying the cars with the wheels through the medium of the respective spindles, said levers also serving to transfer the cars from one wheel to another.

4. In apparatus of the class described, the combination with a plurality of tangentially arranged wheels having peripheral notches, and means to rotate said wheels, of a plurality of cars provided with axially disposed spindles, and cam-actuated devices for releasably retaining said spindles in engagement with said notches and also effect the transfer of the spindles from one to another of said wheels, and means rendered operative by the rotation of the wheels whereby the cars are rotated about the respective spindles during their orbital travel with the wheels.

Signed at Seattle, Washington, this 17th day of June, 1918.

JOHN STANLEY.

Witnesses:

PIERRE BARNES,

EDITH PETERSON.