

April 4, 1944.

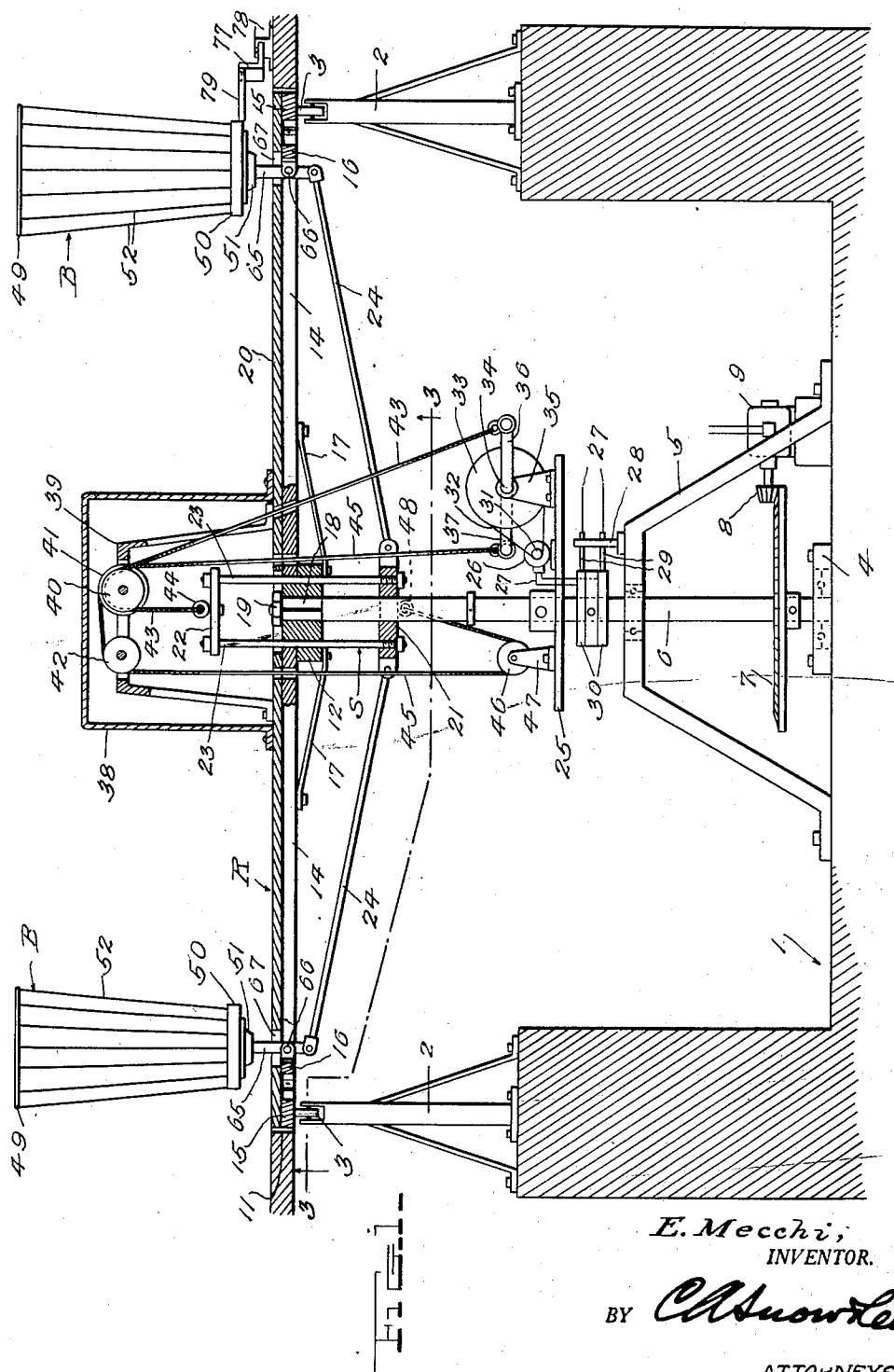
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AMUSEMENT APPARATUS

Filed Dec. 12, 1941

3 Sheets-Sheet 1



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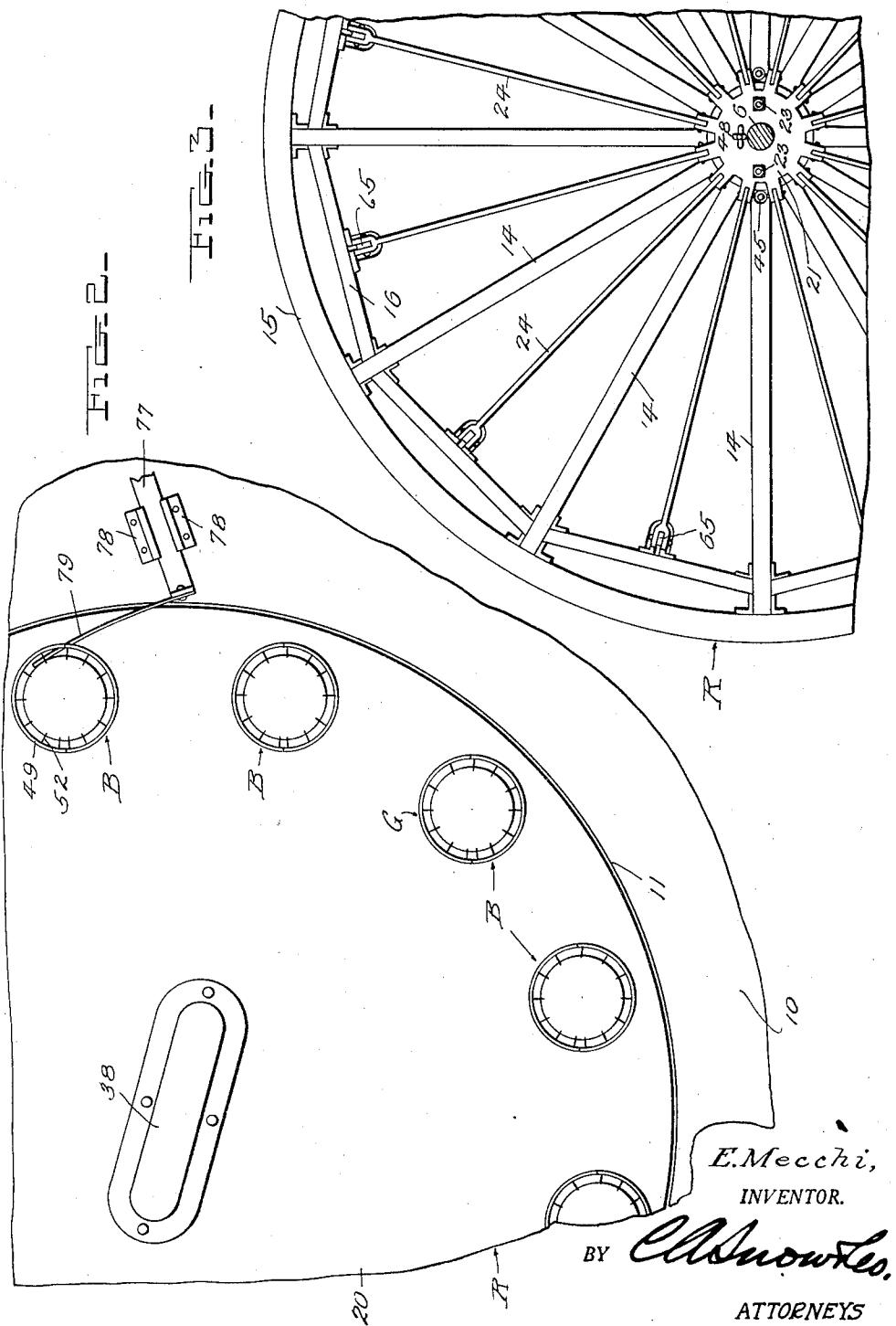
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## AMUSEMENT APPARATUS

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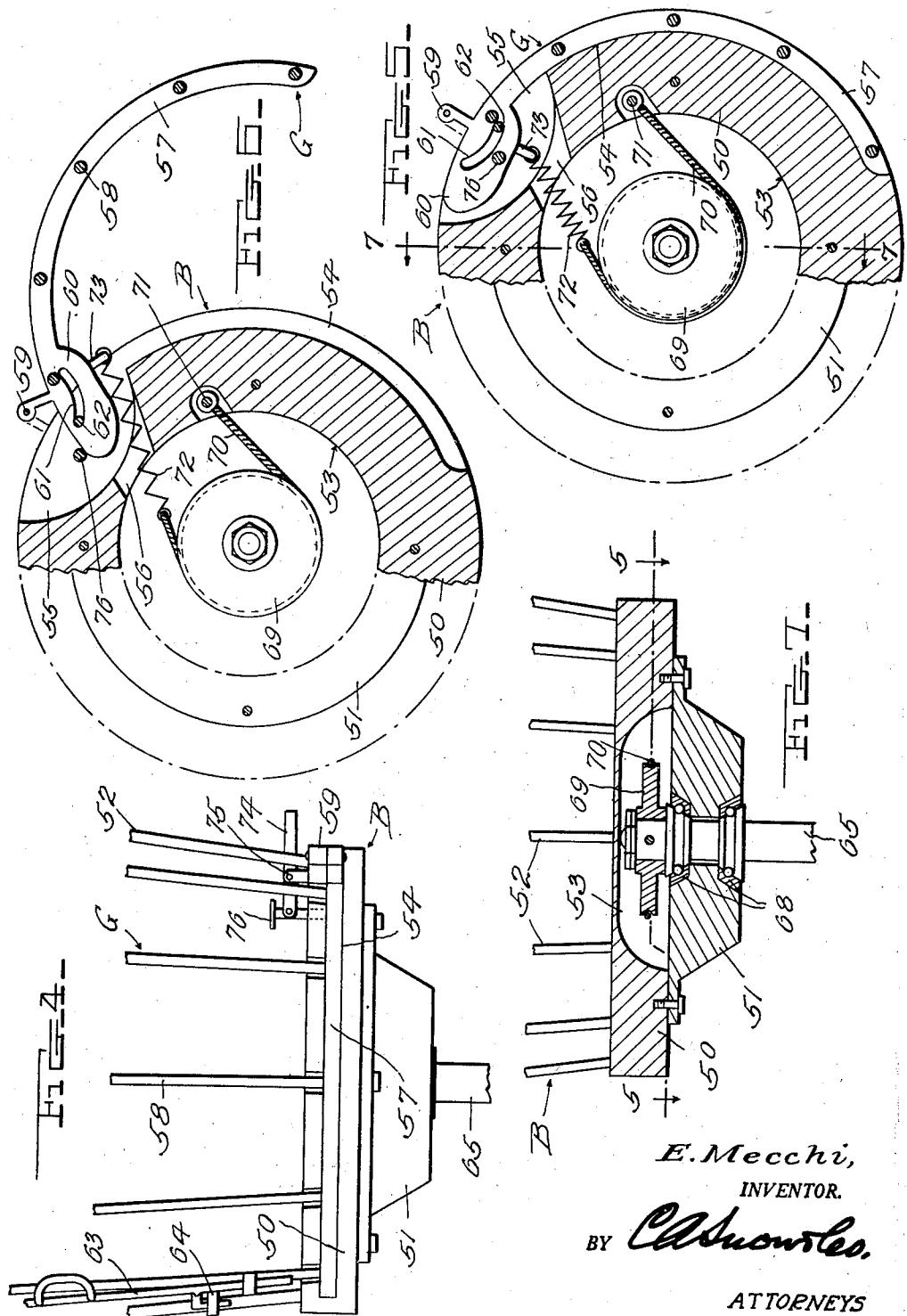
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## AMUSEMENT APPARATUS

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## UNITED STATES PATENT OFFICE

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## AMUSEMENT APPARATUS

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9 Claims. (Cl. 272—48)

The device forming the subject matter of this application is an amusement machine in which passenger baskets are carried around in an orbit by a rotor. The invention aims to provide novel means for swinging the baskets in and out as they move in an orbit, and to provide novel means for rotating the baskets, about substantially vertical axes, as they move in an orbit. A further object of the invention is to supply novel means for stopping the rotation of the baskets about substantially vertical axes, when a basket-gate is opened.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:

Fig. 1 shows in vertical transverse section, a device constructed in accordance with the invention;

Fig. 2 is a top plan wherein parts are broken away;

Fig. 3 is a top plan showing a portion of the frame of the rotor;

Fig. 4 is a side elevation of one of the baskets, parts being broken away;

Fig. 5 is a section taken on the line 5—5 of Fig. 7, the gate being closed;

Fig. 6 is a similar view, the gate being opened;

Fig. 7 is a section on the line 7—7 of Fig. 5.

In carrying out the invention, there is provided a support, including a base 1, on which are mounted vertical, braced posts 2, anti-friction wheels 3 being supported for rotation on the upper ends of the posts. A foot bearing 4 is carried by the base 1 and is located within an upstanding bearing frame 5, secured to the base. A vertical main shaft 6 is mounted to rotate in the bearing frame 5, the lower end of the shaft being carried by the foot bearing 4. Within the contour of the bearing frame, a large beveled gear 7 is secured to the shaft 6, the gear meshing with a small beveled pinion 8, secured to the shaft of an electric motor 9, carried by the base 1. The motor 9 may be referred to as a first motor.

The numeral 10 marks a fixed platform provided with an opening 11 in which is located a rotor R. The framework of the rotor R includes a central hub 12, radial arms 14 extending from the hub, a rim 15 joined to the outer ends of the arms, rigid ties 16 joining adjacent arms and disposed close to the rim, and inclined braces 17 connecting the hub 12 with the arms 14. The rim 15 rides on the wheels 3. The upper end 18 of the main shaft 6 is squared as shown at 18, the squared part of the shaft fitting in a correspondingly shaped opening in the hub 12. A nut 19 is threaded on the extreme upper end of the shaft 6 and holds down the hub 12 on the squared part 18 of the shaft. A turntable 20 is secured to the framework of the rotor R.

A slide S is mounted for vertical reciprocation in the rotor R and on the main shaft 6. The slide S includes a foot 21, slideable on the shaft 6, a head 22 disposed above the turntable 20, and rigid connections 23 joining the head and the foot. The connections 23 are vertically slideable through the hub 12. The inner ends of rigid, radial links 24 are pivoted to the foot 21.

25 A stage 25 is secured to the main shaft 6, above the frame 5. On the stage 25 is mounted an electrical motor 26, which may be called a second motor. The circuit for the motor 26 is designated by the numeral 27. A standard 28 is mounted on the upper end of the frame 5 and carries brushes 29, engaging collector rings 30, secured to the shaft 6 but insulated therefrom. The collector rings 30 are interposed in the motor circuit 27. Any substitute structure may 35 be provided whereby current may be supplied to the second motor 26, which moves around in a horizontal orbit, when the shaft 6 is rotated.

The shaft of the motor 26 carries a pulley 31, about which is engaged a belt 32, engaging a 40 large pulley 33 on a shaft 34 mounted to turn in a bracket 35 on the stage 25. The shaft 34 has oppositely projecting crank arms 36 and 37.

A housing 38 is secured to the turntable 20 of the rotor R, an upstanding frame 39 being secured to the turntable, within the housing. Pulleys 40 and 41 are supported for rotation on the upper part of the frame 39, side by side, and a pulley 42 is journaled on the frame, in offset relation with respect to the pulleys 40 and 41. 45 One end of a flexible element 43 is connected to the crank arm 36. The flexible element 43 extends upwardly, and downwardly, about the pulley 40, the flexible element being secured at 44 to the head 22 of the slide S. A flexible element 55 45 is secured to the crank arm 37 and extends up-

wardly and horizontally over the pulley 41. Thence, the flexible element 45 extends downwardly about the pulley 42, and upwardly about a sheave 46, carried by a bracket 47 on the stage 25. The flexible element 45 is attached at 48 to the foot 21 of the slide S.

Baskets B are disposed above the rotor R, and there may be as many or as few of the baskets as is desired. The baskets B may be constructed as desired. They are shown as comprising, each, an upper rail 49, a base 50, a hub 51 secured to the lower surface of the base, and spokes 52 connecting the base with the upper rail. The base 50 has a cavity 53 which is closed by the hub 51. The base 50 has a groove 54 extended partway therearound. At one end, the groove 54 is enlarged to form an inwardly extended recess 55. A passage 56 connects the cavity 53 with the recess 55.

The letter G marks a gate, constituting a closure for the otherwise open portion of the basket B. The gate G includes a top rail, a curved bottom rail 57, and spokes 58 connecting the rails. Near one vertical edge, the gate G is connected with a basket B by hinges 59. At its hinged end, the bottom rail 57 of the gate has an enlargement 60, in which is located a curved slot 61. A guide rod 62 is mounted in the base 50 of the basket and extends vertically across the recess 55, the guide rod being received in the slot 61 of the gate. The slot 61 and the guide rod 62 cooperate to take strain off the hinged mounting 59 of the gate.

When the gate G is closed, the bottom rail 57 is received in the groove 54 of the base, the enlargement 60 being received in the recess 55, and the gate being held closed by a latch 63, adapted to engage keepers 64 on the gate and on one of the spokes 52 of the basket body, as Fig. 4 shows.

Each basket B is carried by an upright lever 65, which is fulcrumed intermediate its ends on the ties 16 of the frame of the rotor R, the levers extending upwardly through holes 67 in the turntable 20. The outer ends of the links 24 are pivoted to the lower ends of the levers 65, which have in and out swinging movement, radially of the rotor R. Ball bearings 68 mount each basket B for rotation on the upper end of the corresponding lever 65. Incidentally, ball bearings may be used wherever desired, throughout the structure. A pulley 69 is secured to the upper end of each lever 65 and is located in the cavity 53 of the basket base 50. About the pulley 69 is trained a flexible element 70, having one end anchored at 71 on the base 50 of the basket B, a pull spring 72 being connected to the opposite end of the flexible element, and to an outstanding finger 73 on the enlargement 60 of the gate, the spring passing through the opening 56.

When the gate G is opened, as in Fig. 6, the spring 72 tightens the flexible element 70 about the pulley 69, rotation of the basket upon the lever 65 being prevented. The spring 72 also serves as a means for closing the gate G, and when the gate is closed, as in Fig. 5, the pull of the spring 72 is lessened to such an extent that the flexible element 70 no longer acts as a brake strap, relatively free rotation of the basket with respect to the lever 65 being then possible.

Since the spring 72 tends to close the gate G, a means is provided for keeping the gate open. That means embodies a lever 74, fulcrumed intermediate its ends, at 75, on the base 50 of the basket B. The inner end of the lever 74 is piv-

oted to a latch pin 76, mounted to slide vertically in the base 50 of the basket. When the latch pin 76 is lowered by means of the lever 74, the latch pin engages one edge of the bottom rail 57 of the gate G, when the gate is open, and the gate cannot close under the pull of the spring 72. If the latch pin 76 is raised by means of the lever 74, the gate G closes, under the action of the spring 72, and the lower end of the latch pin then rests on top of the enlargement 60 of the gate, as shown in Fig. 5.

A means is provided whereby rotation may be imparted to each basket, relatively to the corresponding lever 65. The means referred to includes a slide 77, best shown in Fig. 2. The slide 77 is mounted on the platform 10 (which is fixed) by means of guides 78 on the platform. At its inner end, the slide 77 is supplied with an angularly disposed finger 79, having some resiliency, the finger being adapted to wipe along the edge of the base 50 of each basket, as the basket moves around in an orbit. The slide 77 and the finger 79 constitutes a wiper.

Let it be supposed that the motors 9 and 26 are idle, the slide 77 being advanced, so that its finger 79 is in the path of the bases 50 of the baskets B as they subsequently move in an orbit, and the baskets being in the vertical positions of Fig. 1. The motor 9 has a high speed and a low speed. It is started at low speed, and rotation is imparted to the rotor R by a train of parts including the pinion 8, the gear wheel 7 and the shaft 6.

The baskets B are caused to rotate on an axis 35 represented by the levers 65, which are then vertical, the base 50 of each basket coming into contact with the finger 79 of the slide 77. The rotation of the baskets on independent axes continues, until the slide 77 has been retracted, to withdraw the finger 79 out of the orbit described by the bases of the baskets. The levers 65 maintain a vertical position, because the motor 26 is at rest, and does not actuate the means whereby the baskets are caused to swing in and out, on the fulcrum 6.

The operator starts the motor 26, the pulleys 31 and 33 and the belt 32 actuate the shaft 34, the crank 36 and the flexible element 43 raising the slide S, and the crank 37 and the flexible element 45 drawing it down. When the slide S moves downwardly, the links 24 and the levers 65 swing the baskets B outwardly, and when the slide moves upwardly, the link and the levers swing the baskets inwardly.

When the motor 26 is stopped, the baskets no longer swing radially of the rotor R, on the fulcrum 6. When the motor 9 is set at high speed, the rotor R turns at correspondingly increased speed for a period of such duration as the operator desires. When the motor 9 is let down to slow speed, and the motor 26 is started and kept working, the baskets B are erected, as shown in Fig. 1. When both motors 9 and 26 are stopped, the rotor R ceases to carry the baskets B in an orbit, and the transit is at an end.

The levers 65 serve also as shafts and basket supports, since the baskets B are mounted to rotate upon them.

The finger 79 constitutes fixed means engageable with the basket B to impart rotation thereto when the rotor R is rotated. The fixed means 79 is of such extent, circumferentially of the rotor R, as to impart rotation to the basket B whilst the rotor rotates through a limited arc, 75 the basket thereafter rotating by inertia. When

swinging movement is imparted to the lever 65, the center of mass of the basket B and the passenger therein is shifted, after the basket has cleared the fixed means 79, and irregularity in the rotation of the basket is produced. It is beyond the limit of probability that the center of mass of the passenger and the basket B will coincide with the axis of rotation of the basket. In an extreme, illustrative instance, the passenger may be leaning outwardly over the edge of the basket. The basket will rotate with a jerk, the rotation ultimately ceasing, and an oscillation of the basket in an arc taking place, perhaps until the basket again encounters the fixed means 79. Recalling that, broadly stated, amusement is the end desired, the operation last above set forth has utility.

Although a preferred method of operation has been set forth, the structure is such that the operator is left free to use his own ingenuity and judgment as to giving the passengers a rough ride or an easy one.

Having thus described the invention, what is claimed is:

1. In an amusement apparatus, a fixed platform, a rotor supported for rotation with respect to the platform and in a substantially horizontal plane, a passenger basket, means for mounting the basket on the rotor for travel, with the rotor, in an orbit, and for rotation about an individual, upright axis, a wiper, and means for mounting the wiper on the platform, for adjustment at the will of an operator, out of engagement with the periphery of the basket, and into engagement therewith thereby to impart rotation to the basket about said individual axis.

2. In an amusement apparatus, a rotor mounted for rotation in a substantially horizontal plane, an upright lever fulcrumed intermediate its ends on the rotor, a basket carried by the upper portion of the lever, a slide mounted for up and down reciprocation on the rotor, means connecting the slide with the lever for imparting movement to the lever, and mechanism for raising the slide; said mechanism including a motor and means for mounting the motor for movement in an orbit, along with the rotor.

3. In an amusement apparatus, a substantially vertical shaft supported for rotation, a rotor carried by the shaft, an upright lever fulcrumed intermediate its ends on the rotor, a passenger basket carried by the upper portion of the lever, a slide mounted for up and down reciprocation on the rotor, means for connecting the slide with the lever for imparting movement to the lever, a stage carried by the shaft and disposed below the rotor, a motor on the stage, a speed reduction device on the stage and driven by the motor and including a shaft having crank arms, flexible elements each connected at one end to one crank arm, the opposite end of one flexible element being connected to the upper portion of the slide, the corresponding end of the other flexible element being connected to the lower portion of the slide, direction-changing upper idlers over which the flexible elements pass, the upper idlers being supported above the rotor, and a lower idler over which another flexible element passes upwardly to the lower portion of the slide, the lower idler being mounted on the stage.

4. In an amusement apparatus, a rotor sup-

ported for rotation, a passenger basket disposed in offset relation to the axis of rotation of the rotor, means for mounting the basket on the rotor for rotation about an individual axis, an entrance and exit gate for the basket and carried thereby, brake mechanism cooperating with the basket to control the rotation thereof, and a connection between the brake mechanism and the gate, the connection constituting means for setting the brake mechanism when the gate is open, and releasing the brake mechanism when the gate is closed.

5. An amusement apparatus constructed as set forth in claim 4, and wherein the connection includes a retractile spring constituting means for closing the gate.

6. In an amusement apparatus, a rotor supported for rotation in a substantially horizontal plane, a shaft mounted on the rotor in offset relation to the axis of rotation of the rotor, a passenger basket mounted to rotate on the shaft and having an entrance and exit gate, a brake drum secured to the shaft, and a brake strap extended about the drum, one end of the brake strap being anchored upon the basket, and the opposite end of the brake strap being attached to the gate.

7. In an amusement apparatus, a passenger basket including a base having a cavity in its lower surface, the base having a circumferentially extended peripheral groove, and having a passage communicating with the cavity, and with the groove at one end thereof, a hub removably secured to the base and closing the cavity, a support whereon the hub is journaled, a brake drum secured to the support and housed in the cavity, an entrance and exit gate hinged to the basket and including a bottom rail shaped to enter the groove when the gate is closed, a flexible brake strap having one end anchored on the basket, the opposite end of the strap being attached to the bottom rail, the strap including a retractile spring disposed in the passage, and a part extended about the brake drum, a rotor, means for supporting the rotor for rotation about a substantially vertical axis, means for rotating the rotor, and means for mounting the support on the rotor, in offset relation to said axis.

8. An amusement apparatus constructed as set forth in claim 7, in combination with releasable means under the control of an operator for holding the gate open, against the closing impulse of the retractile spring.

9. In an amusement device, a rotor supported for rotation in a substantially horizontal plane, means for rotating the rotor, an upright lever fulcrumed on the rotor, a passenger basket mounted to rotate freely on the lever and located above the rotor, fixed means engageable with the basket to impart rotation thereto when the rotor is rotated, the fixed means being of such extent, circumferentially of the rotor, as to impart rotation to the basket whilst the rotor rotates through a limited arc, the basket thereafter rotating by inertia, and means for imparting swinging movement to the lever, thereby to shift the center of mass of the basket and the passenger therein, after the basket has cleared the fixed means, and to produce irregularity in the rotation of the basket.

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