

J. C. DUNHAM.
 ROUNDABOUT.

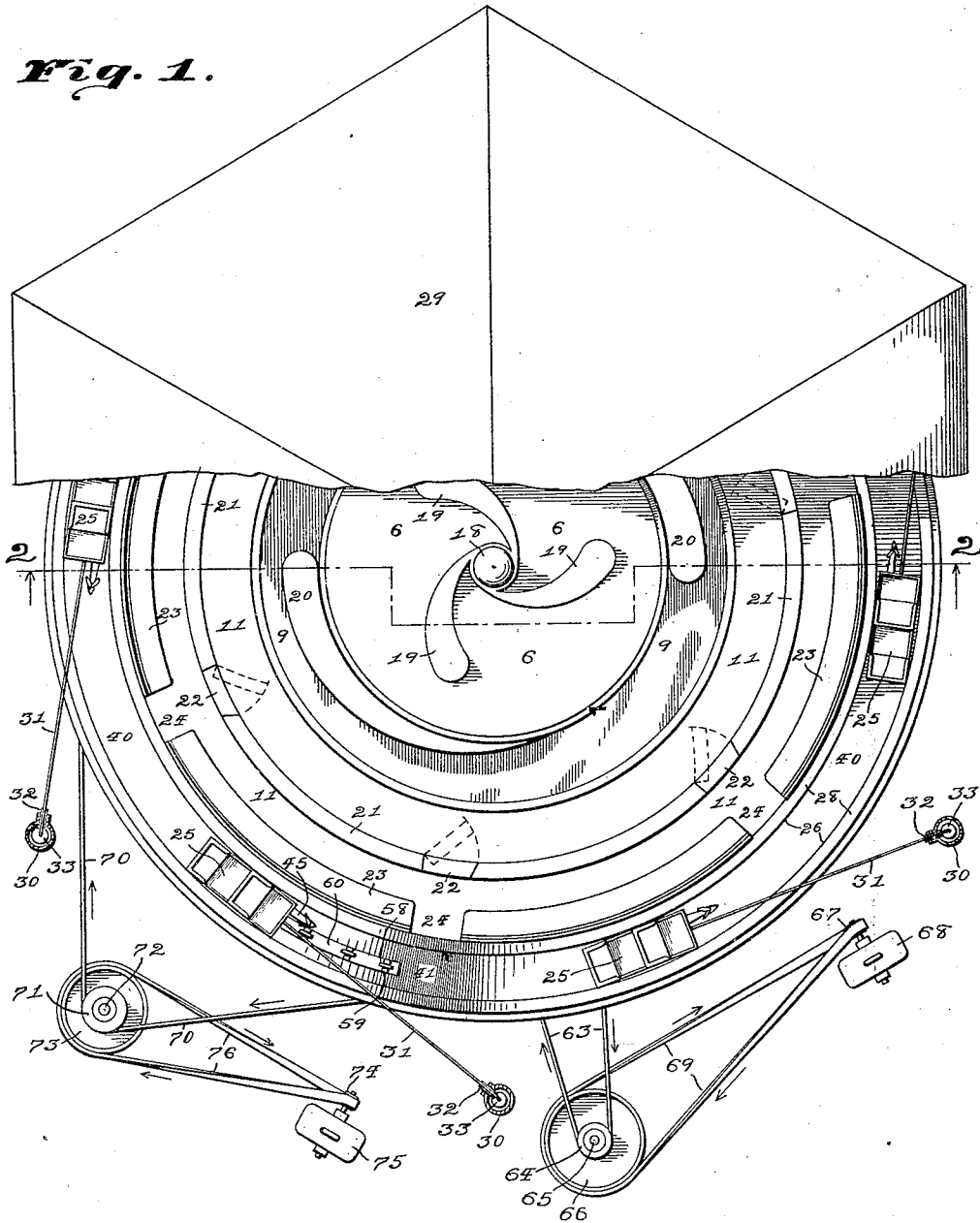
APPLICATION FILED SEPT. 23, 1912. RENEWED MAY 11, 1914.

1,121,813.

Patented Dec. 22, 1914.

3 SHEETS-SHEET 1.

Fig. 1.



Witnesses
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Inventor:
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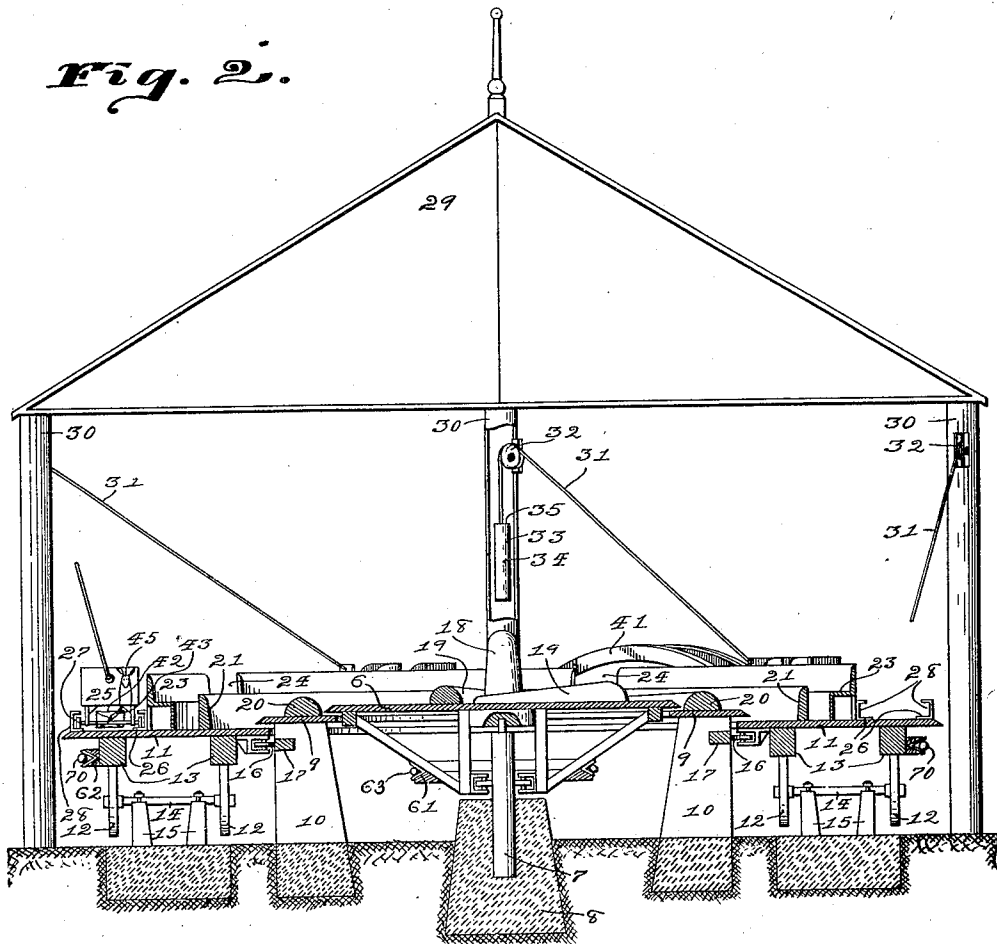
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3 SHEETS—SHEET 2.



Witnessed:
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3 SHEETS-SHEET 3.

Fig. 3.

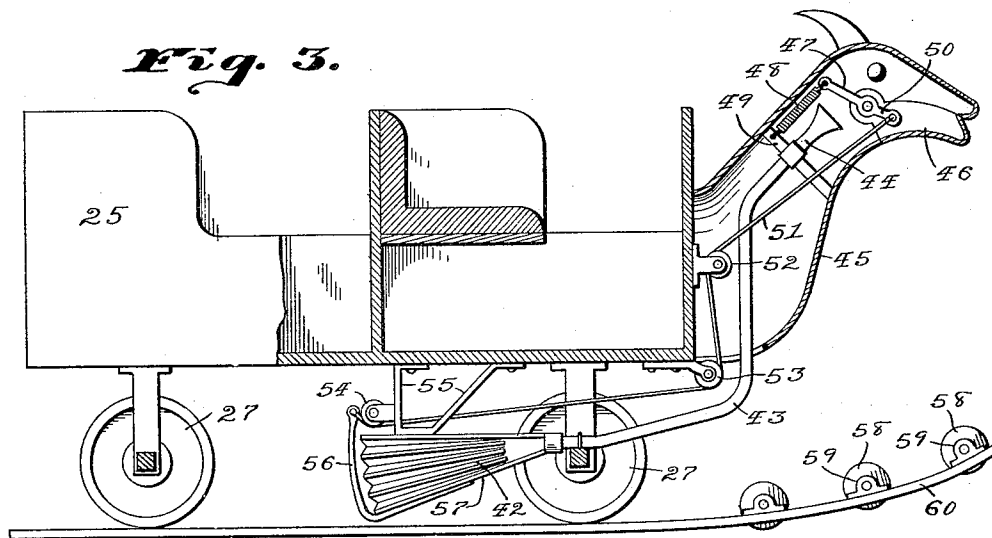
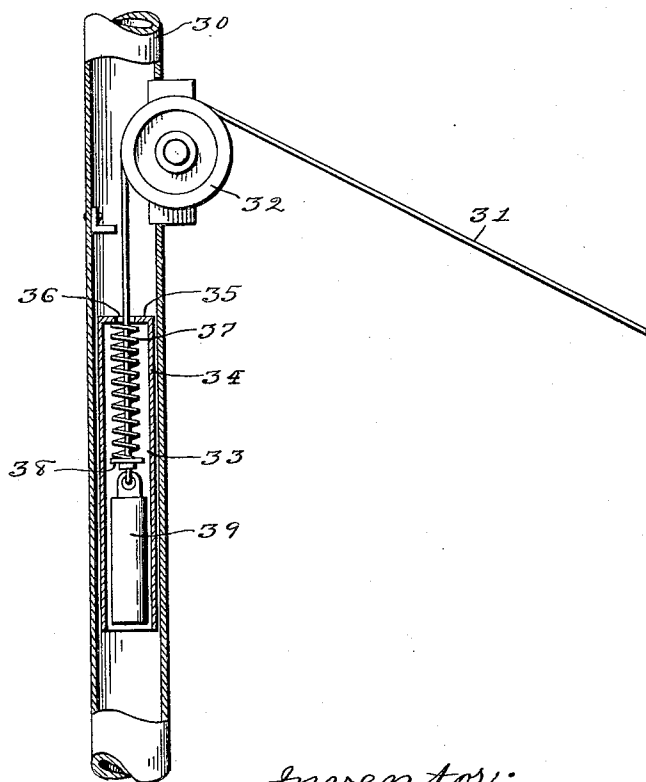


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ROUNDAABOUT.

1,121,813.

Specification of Letters Patent.

Patented Dec. 22, 1914.

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To all whom it may concern:

Be it known that I, JOSEPH C. DUNHAM, a citizen of the United States, residing at Spencer, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Roundabouts, of which the following is a specification, reference being had to the annexed drawings.

The invention pertains to improvements in roundabouts, the object being to provide a device of this class: first, which will furnish a greater variety of amusement and exercise; second, which will develop the skill and activity of persons riding or attempting to remain upon certain parts of it; and third, having other parts upon which persons may ride with the usual floating sensation without the whirling movement or centrifugal force found in other devices of this nature.

Referring to the drawings: Figure 1 is a plan view of the device, with portions of its roof broken away. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a side elevation of a small car used in the device, looking from without the roundabout, the figure also showing a portion of track-bar supporting certain pulleys. Fig. 4 is an enlarged sectional view of one of the columns which support the roof structure, showing also a weight and other mechanism in said column.

Referring to the several figures, in all of which like characters of reference designate like parts, the improved device comprises, in part, a central circular floor portion 6 mounted to revolve in a horizontal plane on a pivot-post 7, said pivot-post being firmly set in concrete or masonry 8 in the ground. The central floor portion 6 is surrounded by concentric annular floor portion 9, mounted fixedly on piers 10 of concrete or masonry. The fixed floor portion 9 is surrounded by an outer concentric annular floor portion 11, mounted to revolve in a horizontal plane around said fixed portion 9. This outer floor portion 11 is supported movably at intervals by pairs of wheels 12, the lower surface of said floor portion being provided with annular ribs or stringers 13 against which said wheels roll as on a track. The wheels 12 are mounted on axles 14, which are in turn embedded in piers 15 of concrete or masonry.

The inner edge of the outer floor portion 11 is provided at intervals with pulleys 16, and these pulleys roll against the outer edge of an annular track-bar 17 embedded in the outer faces of the piers 10. The upper surface of the central floor portion 6 is provided with a rigid center-post 18, and also with removable interfering devices 19 which extend in involute curves from said center-post, these interfering devices being padded or of yieldable material to avoid injury to persons tripping or falling over them. The fixed floor portion 9 is also provided with interfering devices 20 which preferably extend around close to the outer edge of the central floor portion 6, said interfering devices also being padded or of yieldable material.

A padded fence or wall 21 extends entirely around the outer floor portion 11 on a circular line about one-third the distance from the inner to the outer edge of said floor portion, this fence being provided at intervals with gates 22 so that persons may pass through it. The outer floor portion 11 is also provided with a seat 23, extending entirely around it outside the fence 21, this seat being provided at intervals with openings allowing passage through it.

The surface of the outer floor portion 11 outside the seat 23 is formed into a track to support a series of cars 25, said surface being provided with track-plates 26 for the car-wheels 27 to roll on, and also with flanges 28 to keep the said wheels from leaving the track. The parts thus described are sheltered by a roof structure 29, which is supported above them by tubular metal columns 30.

In order that the cars 25 shall not follow around with the outer floor portion 11, as the latter is revolved for purposes later shown, each car is held captive by a cord or rope 31 which extends from its front end upward obliquely to the top of a column 30 ahead of it, said rope extending into said column and over a pulley 32 therein, and being attached to a weight 33.

As best shown in Fig. 4, the weight 33 partly consists of a hollow cylindrical body 34, whose upper end is closed by a wall having a central opening 36. The rope 31 passes loosely down through the opening 36, passing also through a compression helical spring 37 and washer 38 in said body 34 and being attached to a smaller weight 39

which supports said washer and spring and the body 34.

To produce a floating or undulating movement of the cars 25, the track surface 40 of the outer floor portion 11 is provided at intervals with wave-like elevations 41, the initial attack of said elevations on a car causing the car to swing backward and upward on a curved line, with its rope 31 as a radius. As the elevation 41 passes from under the cars 25, the latter pitch forward and downward again onto the general level of the track surface 40.

As an elevation 41 is raising the car 25 upward in the manner described, the increased pull of the car on the rope 31 causes the weight 33 to raise yieldingly upward, thus allowing the car limited movement in the direction of travel of the elevation; and as the elevation is passing from under the car the decreased pull on the rope allows the weight to settle back to initial position. The spring 37 in the weight 33 cushions any jerks or sudden decreases in pull of the car 25 on the rope 31, absorbing the shocks until the inertia or momentum of the weight is overcome.

To add to the interest and excitement, each car 25 is provided with sounding means, adapted to be automatically operated while the device is in use.

In arranging the sounding means, a bellows 42 is mounted under and supported by the car 25, an air-pipe 43 leading from the bellows to a wind-operated horn 44 mounted on the front of the car. To combine an animal appearance with the sound produced by the horn 44, the latter is housed within a casing 45 shaped like a neck and head, the head having a pivoted lower jaw 46. This jaw 46 has at its pivotal end an arm 47, and is yieldably held closed by a tension spring 48 which connects said arm to a cross-piece 49 in said neck. To open the jaw 46, its pivotal end is provided with a second arm 50, which, incidentally, is integral with the first-named arm 47. A cord 51 passes from this arm 50 over a pulley 52 on the front of the car 25; under a similar pulley 53 at the lower front corner of the body; and under a third pulley 54 on the bracket 55 extending down from the under side of said body; said cord then attaching to the upper end of an arc-shaped arm 56 whose lower end is attached to the free end of the lower or movable wall 57 of the bellows 42. At each time the bellows 42 is closed to sound the horn 44, the pull of the arm 56 on the cord 51 causes the jaw 46 to open. To work the bellows 42, the track surface 40 is provided at intervals with rollers 58, these rollers being preferably mounted in bearings 59 on a metal strip 60. These rollers 58 are preferably at or near the elevations 41 of the track surface 40, and as they pass under the

cars 25 each one closes the bellows 42, with the result that the jaw 46 is opened and the horn 44 sounded.

In the use of the device, people are allowed to mount the outer floor portion by walking in across the track surface 40 and through the gates 24 in the seat 23. Those who merely wish to ride on the outer floor portion 11 may sit on the seat 23 or stand in the space in front of said seat outside the padded fence 21. Others may sit in the cars 25, which, though being held stationary with respect to the earth by the ropes 31, will be given a jarring or slight moving sensation by movement of the floor portion 11 under them.

For revolving the central floor portion 6 and outer floor portion 11, their substructures are provided with or formed into belt pulleys 61 and 62, respectively. A belt 63 extends around the belt pulley 61 of the central floor portion 6, and around a small belt-pulley 64 mounted somewhat remotely on a spindle 65 suitably supported for the purpose. This small belt-pulley 64 is integral with a larger belt-pulley 66, motion being imparted from the belt-pulley 67 of a motor 68 to said belt-pulley 66 by a belt 69. This arrangement of parts allows the motor 68 to drive the central floor portion 6 at suitable speed, say twenty revolutions per minute. A similar belt 70 extends around the belt-pulley 62 of the outer floor portion 11 and around a small belt-pulley 71 mounted somewhat remotely on a spindle 72 suitably supported for the purpose. This small belt-pulley 71 is integral with a larger belt-pulley 73, motion being imparted from the belt-pulley 74 of a motor 75 to said belt-pulley 73 by a belt 76. This arrangement of parts allows the motor 75 to drive the outer floor portion at suitable speed, say ten revolutions per minute.

The motors 68 and 75 are preferably electric motors, the current for said motors being controlled by rheostatic switches, not shown in the drawings, so arranged that one operator may control the speed of both the inner floor portion 6 and outer floor portion 11.

In entering further into the amusement, the persons riding on the outer floor portion 11 may step onto the stationary floor portion 9, testing their skill and activity in attempting to alight thereon, and possibly falling and again rolling back onto said outer floor portion by centrifugal force.

Those who gain and sustain footing on the stationary floor portion 9 will then attempt to mount and ride standing upon the central floor portion 6, usually being thrown down by the movement of said floor portion or tripped and thrown outward back onto the stationary portion 9 by centrifugal force.

Having thus described the invention; I claim:

1. In a device of the class described, a floor portion adapted to be revolved in a horizontal plane, interfering devices mounted on said floor portion and extending on involute curves from the center thereof.
2. In a device of the class described, a floor portion adapted to be revolved and having the outer portion of its surface formed into a track, means for revolving said floor portion, a vehicle mounted on said track, a pulley supported on a line tangent to the track, a rope attached to the vehicle and extending over the pulley, and a weight on the free end of said rope.
3. In a device of the class described, a floor portion adapted to be revolved and having the outer portion of its surface formed into a circular track, means for revolving said floor portion, a vehicle mounted on said track, a pulley supported on a line tangent to the track, a rope attached to the vehicle and extending over the pulley, and a weight yieldably connected to the free end of said rope.
4. In a device of the class described, a floor portion adapted to be revolved and having a circular track formed on its surface, means for revolving said floor portion, a vehicle mounted on said track, a tubular column erected near the floor portion, a pulley mounted at the top of the column, a rope extending from the vehicle over the pulley and down into the column, and a weight attached to said rope in said column.
5. In a device of the class described, a floor portion adapted to be revolved and having a circular track formed thereon, a vehicle mounted on said track, means for revolving said floor portion, means for holding the vehicle captive while the floor portion revolves under it, sounding means carried by the vehicle, said sounding means being operable by the movement of the floor portion under said vehicle.
6. In a device of the class described, a floor portion adapted to be revolved and having a circular track formed thereon, a vehicle mounted on said track, means for revolving the floor portion, means for holding the vehicle captive while the floor portion revolves under it, sounding mechanism carried by the vehicle, and a member carried by the track for actuating said sounding mechanism.
7. In a device of the class described, a floor portion adapted to be revolved and having a circular track formed thereon, a vehicle mounted on said track, means for revolving said floor portion, means for holding the vehicle captive while the floor portion revolves under it, a sounding device carried by the vehicle and operable by compressed air, air-compressing means carried by the vehicle for said sounding device, and mechanism carried by the track for operating the air-compressing means.
8. In a device of the class described, a floor portion adapted to be revolved and having a circular track formed thereon, means for revolving said floor portion, means for holding the vehicle captive while the floor portion revolves under it, sounding means carried by the vehicle and operable by compressed air, a bellows carried by the vehicle and adapted to supply compressed air to the sounding means, and a member carried by the track to act on said bellows.
9. In a device of the class described, a floor portion adapted to be revolved and having a track formed thereon, a vehicle mounted on the track, means for holding the vehicle captive while the floor portion revolves under it, the front portion of the vehicle being shaped as the neck and head of an animal, an air-operated sounding device carried in said neck, the lower portion of the head being pivoted as a jaw, a bellows carried by and under the vehicle, a pipe connection between the bellows and the sounding device, an operative connection between the movable wall of the bellows and said jaw, and mechanism carried by the floor portion to operate said bellows.
10. In a device of the class described, a central floor portion adapted to be revolved, a fixed annular floor portion surrounding said central floor portion, an annular floor portion mounted exteriorly of the fixed floor portion and adapted to be revolved, the central floor portion having a center-post, interfering devices on said central floor portion extending as involute curves with respect to said center-post, interfering devices carried by the fixed floor portion and extending circumferentially thereon with respect to the central floor portion, and independent means for revolving the central and exterior floor portions.
11. In a device of the class described, a central circular floor portion adapted to be revolved, a fixed annular floor portion surrounding the central floor portion, an annular floor portion arranged exteriorly of said fixed floor portion and adapted to be revolved, a padded wall or fence extending around the exterior floor portion near its inner edge, a vehicle mounted on the surface of the exterior floor portion outside said padded fence, and means for holding said vehicle captive while said exterior floor portion revolves under it.
12. In a device of the class described, a circular fixed floor portion, an outer annular floor portion arranged to revolve around said fixed floor portion, a padded fence extending around on the surface of the outer floor portion near its inner edge, said fence having openings, a seat extending around

on the surface of said outer floor portion outwardly of said padded fence, said seat having openings.

13. In a device of the class described, a
5 circular fixed floor portion, an annular floor
portion arranged exteriorly of the fixed
floor portion and adapted to revolve around
it, a padded fence extending around on the
10 surface of said exterior floor portion near
its inner edge, a seat extending around on
the surface of said exterior floor portion
outside said fence, a vehicle mounted on
said exterior floor portion outside said seat,
15 and means holding said vehicle captive
while said exterior floor portion revolves
under it.

14. In a device of the class described, a
central circular floor portion adapted to be
revolved, a fixed annular floor portion sur-
20 rounding the central floor portion, an annu-
lar floor portion arranged exteriorly of the
fixed floor portion and adapted to revolve
around it, the central floor portion having
a center-post, interfering devices carried by
25 said central floor portion and extending on
involute curves with respect to said center-
post, interfering devices mounted on the
fixed floor portion and extending circum-
ferentially with respect to the central floor
30 portion, and a padded fence on the surface
of the outer floor portion.

15. In a device of the class described, a
central circular floor portion adapted to be
revolved, an annular fixed floor portion sur-
35 rounding the central floor portion, an annu-
lar floor portion arranged exteriorly of the
fixed floor portion and adapted to revolve
around it, independent means for revolving
the central and exterior floor portions, the

central floor portion having a center-post, 40
involute interfering devices carried by said
central floor portion, interfering devices
mounted upon the fixed floor portion and
extending circumferentially thereon with
respect to the central floor portion, a padded 45
fence extending around on the surface of
the outer floor portion near its inner edge,
said fence having openings, a seat extending
around on the surface of said outer floor
portion outwardly of said padded fence, 50
said seat having openings, a vehicle mount-
ed on the outer floor portion outside said
seat, means for holding the vehicle captive
while said outer floor portion revolves under
it, the surface which passes under said 55
vehicle being provided with elevations.

16. In a device of the class described, a
floor portion adapted to be revolved, a
vehicle mounted on said floor portion, a
suitable anchorage, a rope connecting the 60
vehicle with said anchorage, and means al-
lowing the rope to yield when pulled upon
by the vehicle.

17. In a device of the class described, a
floor portion adapted to be revolved, a 65
vehicle mounted on the floor portion, a fixed
column, a weight arranged to move verti-
cally in the column, a pulley at the top of
the column, a rope extending from the car
over the pulley and attached to the weight, 70
the attachment of the rope to said weight
being yieldable.

Witness my hand this 19 day of Septem-
ber, 1912.

JOSEPH C. DUNHAM.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."