Dec. 3, 1946. J. PSAILA 2,412,060

NOVELTY AMUSEMENT AIR RIDE APPARATUS

Filed Sept. 14, 1943 2 Sheets-Sheet 1

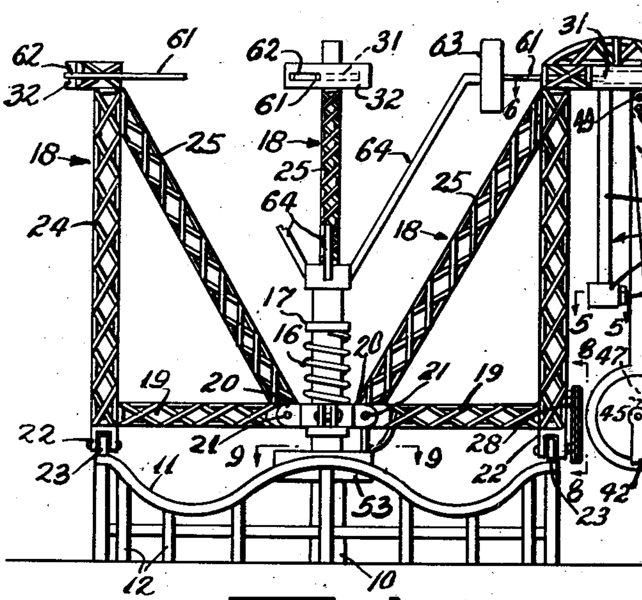

Fig. 1.

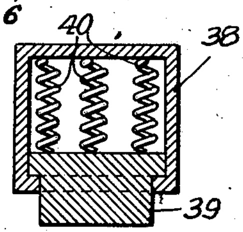

Fig. 5.

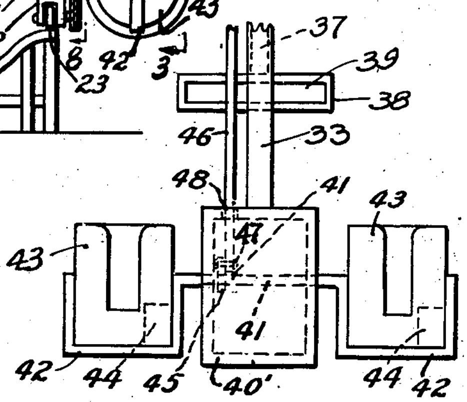

Fig. 3.

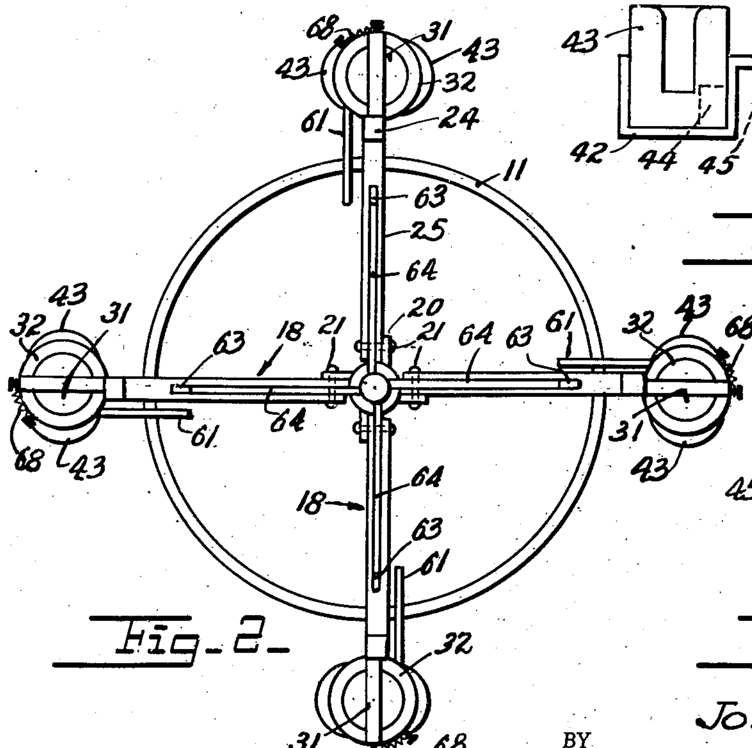

Fig. 2.

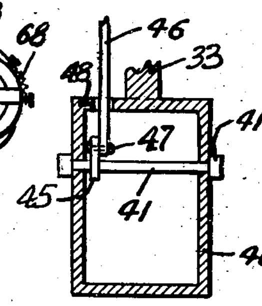

Fig. 4.

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NOVELTY AMUSEMENT AIR RIDE APPARATUS

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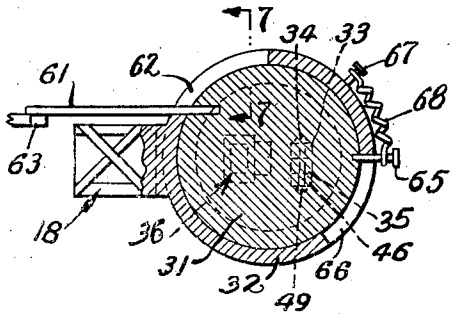

Fig. 6.

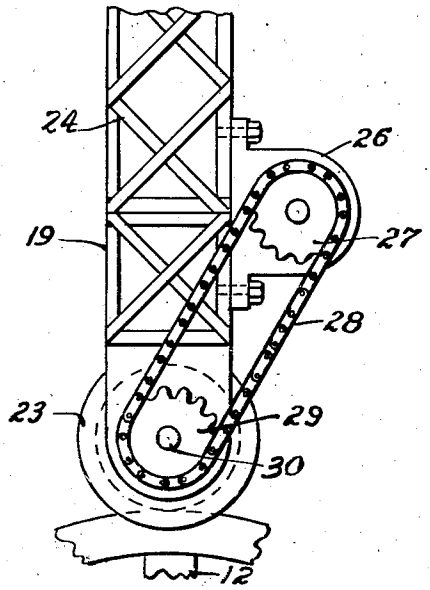

Fig. 8.

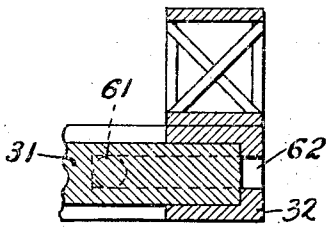

Fig. 7.

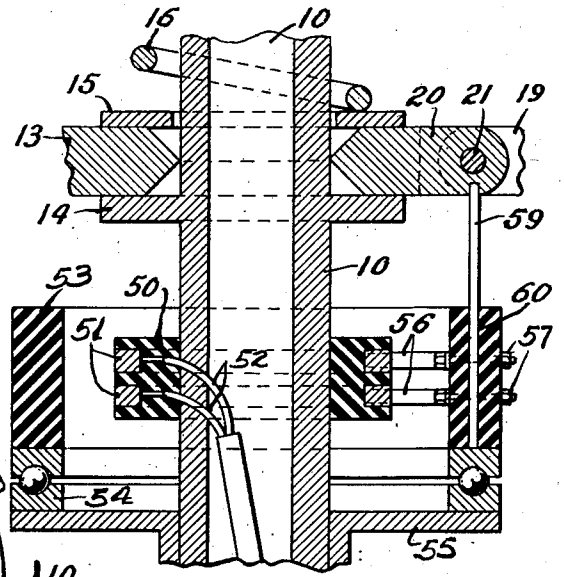

Fig. 10.

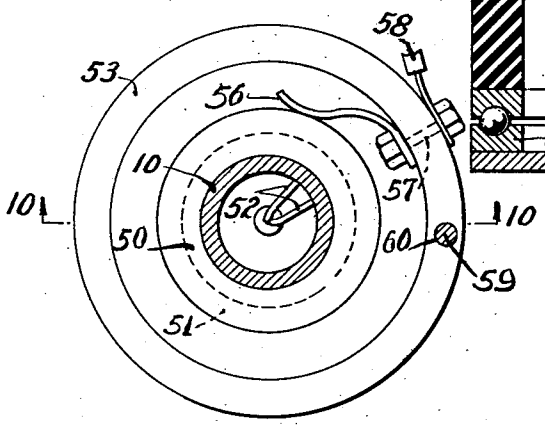

Fig. 9.

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UNITED STATES PATENT OFFICE

2,412,060

NOVELTY AMUSEMENT AIR RIDE APPARATUS

John Psaila, New York, N. Y.

Application September 14, 1943, Serial No. 502,267

6 Claims. (Cl. 272—45)

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This invention relates to new and useful improvements in a novelty amusement air-ride apparatus.

More specifically, the invention proposes the construction of a novelty amusement air-ride apparatus for use at amusement parks, carnivals and the like which provides pivotally mounted seats in which passengers may seat themselves in a manner to receive a thrill ride as the device circumnavigates an annular track having vertical wave-like portions.

Still further, it is proposed to mount the seats upon a pivotally mounted depending support arm in a manner to cause the arm and seats to swing radially of the annular track as they move about the track.

Another object of the invention proposes the provision of a bumper against which the arms are adapted to strike when they swing inwards, in a manner to arrest this inward motion and prevent the seats from striking their supporting structure.

A further object of the invention proposes mounting the arm eccentrically upon a rotatively supported disc with provision of means for periodically oscillating the disc in a manner to impart a slight twisting motion to the seats as they swing radially and move about the track.

It is a further object of this invention to construct a novelty amusement air-ride apparatus which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of this invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of the novelty amusement air-ride apparatus constructed according to this invention but with the front frame broken away.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is an enlarged detailed view looking in the direction of the line 3—3 of Fig. 1.

Fig. 4 is a vertical sectional view of the center portion of Fig. 3.

Fig. 5 is an enlarged sectional view taken on the line 5—5 of Fig. 1.

Fig. 6 is an enlarged horizontal sectional view taken on the line 6—6 of Fig. 1.

Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 6.

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Fig. 8 is an enlarged view looking in the direction of the line 8—8 of Fig. 1.

Fig. 9 is an enlarged horizontal sectional view taken on the line 9—9 of Fig. 1.

Fig. 10 is a vertical sectional view on the line 10—10 of Fig. 9.

The novelty amusement air-ride apparatus, according to this invention, includes a stationary vertical post 10. An annular track 11 is arranged concentric with the post 10 and is provided with vertical wave-like portions. The track 11 is supported in a slightly elevated position by means of supporting brackets 12.

A hub 13 is rotatively supported upon the vertical post 10. The hub 13 is in the form of a ring which rests upon a projecting flange 14 formed upon an intermediate portion of the post 10. The top of the hub 13 is engaged by a ring 15 which slidably engages the post 10. A spring 16 is concentrically engaged upon the post 10 and operates between the top face of the ring 15 and a collar 17 fixedly mounted upon the top portion of the post 10. The spring 16 acts to urge the hub 13 into position against the flange 14.

Vertical frames 18 extend radially from the hub 13. Each of the frames 18 is alike in construction and each includes a horizontal member 19 of structural steel extended radially of the hub 13. The inner end of each horizontal member 19 is pivotally supported upon a lug 20 which extends from the hub 13 by means of a pin 21. The outer end of each horizontal member 19 has a bracket 22 rotatively supporting a roller 23 which is adapted to roll upon the track 11. Each horizontal member 19 carries a vertical member 24 reenforced by an angular brace 25. Each vertical member 24 and the brace 25 are formed of the same material as the horizontal member 19.

A means is provided for driving the frames 18 along the track as the hub 13 turns on the post 10. This means comprises a speed reduction unit and motor 26 mounted upon the side of one of the frames 18 at a point above the roller 23. The reduction unit and motor 26 has an extended rotative shaft carrying a sprocket wheel 27. A sprocket chain 28 engages the sprocket wheel 27 and a sprocket wheel 29 mounted upon a pin 30 upon which the roller 23 is mounted. Both the roller 23 and the sprocket wheel 29 are fixedly mounted upon the pin 30 to turn the roller 23 when the sprocket wheel 29 is turned.

A horizontal disc 31 is horizontally turnably mounted in a supporting track 32 mounted upon the top end of each of the vertical members 24 of each of the frames 18. A support arm 33 piv-

otally depends eccentrically from each of the discs 31. A pin 34 pivotally attaches the arm 33 to a depending lug 35 so that the arm will be capable of pivoting only radially of the frame 18 when the disc 31 is in its normal position shown in Figs. 1 and 6.

A bumper 36 is mounted on each of the discs 31 behind the arm 33 to arrest inward pivoting of the arm and prevent it from striking the vertical member 24 of its respective frame 18. Each of the bumpers 36 is alike in construction and each comprises a depending bracket 37 upon the bottom of which a hollow container 38 is mounted. A bumper member 39 slidably extends from the container 38 and is adapted to be hit by the swinging arm 33. Springs 40 are mounted within the container 38 and urge the bumper member 39 into an extended position.

Seats 44 are indirectly mounted on horizontal pivotal axis on the bottom portion of each of the support arms 33. The bottom of each support arm 33 carries a hollow casing 40' from which the ends of a shaft 41 extend. The ends of the shaft 41 continue into U-shaped support brackets 42. Each bracket 42 supports a hollow open-top container 43 within which a seat 44 is mounted. A person is adapted to enter the container 43 and seat himself upon the seat 44. Straps may be provided for strapping the person in position upon the seat 44 to prevent him from falling out during the ride, but these straps are not shown on the drawing.

Means are provided for oscillating the containers 43 about the horizontal axes of the shafts 41 for moving the seats 44 into certain positions as the arms 33 swing radially outwards. This means is alike for each of the arms 33, and each comprises a link 45 connected to an intermediate portion of the shaft 41 within the hollow casing 40'. The free end of the link 45 is connected to one end of a rod 46 by means of a pin 47. The other end of the rod 46 extends upwards through an enlarged opening 48 formed in the casing 40' and is pivotally connected to the depending lug 35 at a point above the pivot pin 34, by means of a pin 49. With this construction as the arm 33 moves radially outwards the rod 46 will exert a pressure on the link 45 causing the seats 44 to be oscillated slightly to maintain substantially an upright position.

A means is provided for supplying the motor and speed reduction unit 26 with the electric current for their operation. A ring 50 of insulation material is mounted upon the post 10 below the hub 13. The ring 50 supports a spaced pair of metallic collector rings 51 to which the ends of a pair of electric leads 52 are connected. The leads 52 are connected with a switch controlled source of electric power, not shown on the drawing. A second ring 53 of insulation material surrounds the first ring 50. The second ring 53 is much larger than the first and is supported to rotate concentrically about the ring 50. This rotative support is accomplished by a bearing 54 arranged between the bottom of the ring 53 and a shelf 55 mounted on the post 10 below the ring 53.

Leaf springs 56 have one of their ends bolted to the inner face of the ring 53. The free end of each of the leaf springs 56 engage one of the collector rings 51. The outer ends of the bolts 57 which hold the leaf springs 56 are connected with wires 58 which are extended along the frames 18 to the motor and gear reduction unit 26.

A pin 59 extends from the hub 13 and slidably

engages into a complementary opening 60 formed in the ring 53 for causing the ring 53 to turn with the hub 13.

Means is provided for periodically turning the discs 31 during the rotations of the hub 13. This means comprises a projection 61 extended from each of the discs 31 through a slot 62 formed in the side of each disc's supporting track 32. The free end of the projection 61 is adapted to strike an abutment 63 mounted on an arm 64 extended from the top end of the post 10. The arms 64 do not rotate, but with the abutments 63 extended into the path traversed by the free ends of the projections 61, contact between the projections 61 and abutments 63, as shown in Fig. 6, will cause the discs 31 to be turned slightly until the projections 61 by-pass the abutments 63.

A pin 65 is mounted upon the disc 31 and is extended through a slot 66 formed in the side of the supporting track 32 of the disc 31. A second pin 67 is mounted upon the track 32 at a point spaced from the pin 65. A contraction spring 68 is mounted between the pins 65 and 67 for urging the disc 31 back to its normal starting position when the projection has by-passed the abutment 63.

The operation of the device is as follows:

With the amusement device in the inoperative position shown in Fig. 1, persons desiring a ride seat themselves upon the seats 44 and power is supplied to the motor and speed reduction unit 26 through the electric leads 52. This will drive the frames 18 about the track 11 causing the outer ends of the frames 18 to go up and down as the rollers pass over the wave-like formations of the track 11. This will cause the seats to swing to and fro upon the ends of the arms 33 as they are oscillated by the links 45 while at the same time being turned eccentrically of the discs 31 as the projections 61 by-pass the abutments 63.

This device may be used as a fixed or portable amusement device at amusement places or built in miniature size with a small electric or spring motor and used as a toy.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A novelty amusement air-ride apparatus having a stationary vertical post and an annular track arranged concentric with said post and having vertical wave-like portions and a hub rotatively mounted on said post with vertical frames extending radially from said hub and being pivotally connected at their bottom portions with said hub and provided with rollers riding said annular track and means for drawing said frames along said track, a horizontal disc horizontally turnably mounted on the top of each frame, a support arm pivotally depending eccentricaly from each of said discs, a bumper mounted on each of said discs behind said support arms, seats pivotally mounted on the bottom portions of said support arms, means for oscillating said seats about their pivotal supports, and means for periodically oscillating said discs during rotations of said hub.

2. A novelty amusement air-ride apparatus having a stationary vertical post and an annular

track arranged concentric with said post and having vertical wave-like portions and a hub rotatively mounted on said post with vertical frames extending radially from said hub and being pivotally connected at their bottom portions with said hub and provided with rollers riding said annular track and means for drawing said frames along said track, a horizontal disc horizontally turnably mounted on the top of each frame, a support arm pivotally depending eccentrically from each of said discs, a bumper mounted on each of said discs behind said support arms, seats pivotally mounted on the bottom portions of said support arms, means for oscillating said seats about their pivotal supports, and means for periodically oscillating said discs during rotations of said hub, said discs being rotatively supported in annular tracks mounted upon the top of said frames.

3. A novelty amusement air-ride apparatus having a stationary vertical post and an annular track arranged concentric with said post and having vertical wave-like portions and a hub rotatively mounted on said post with vertical frames extending radially from said hub and being pivotally connected at their bottom portions with said hub and provided with rollers riding said annular track and means for drawing said frames along said track, a horizontal disc horizontally turnably mounted on the top of each frame, a support arm pivotally depending eccentrically from each of said discs, a bumper mounted on each of said discs behind said support arms, seats pivotally mounted on the bottom portions of said support arms, means for oscillating said seats about their pivotal supports, and means for periodically oscillating said discs during rotations of said hub, said bumpers comprising brackets depending from said discs, hollow containers mounted on the bottom ends of said brackets, bumper members extending from said hollow containers and springs within said containers urging said bumper members into extended positions.

4. A novelty amusement air-ride apparatus having a stationary vertical post and an annular track arranged concentric with said post and having vertical wave-like portions and a hub rotatively mounted on said post with vertical frames extending radially from said hub and being pivotally connected at their bottom portions with said hub and provided with rollers riding said annular track and means for drawing said frames along said track, a horizontal disc horizontally turnably mounted on the top of each frame, a support arm pivotally depending eccentrically from each of said discs, a bumper mounted on each of said discs behind said support arms, seats pivotally mounted on the bottom portions of said support arms, means for oscillating said seats about their pivotal supports,

and means for periodically oscillating said discs during rotations of said hub, each of said arms having a casing at its bottom end, a horizontal shaft extending rotatively through said casing and said seats being mounted in open top containers mounted upon the ends of said shafts and comprising the pivotal mounting of said seats.

5. A novelty amusement air-ride apparatus having a stationary vertical post and an annular track arranged concentric with said post and having vertical wave-like portions and a hub rotatively mounted on said post with vertical frames extending radially from said hub and being pivotally connected at their bottom portions with said hub and provided with rollers riding said annular track and means for drawing said frames along said track, a horizontal disc horizontally turnably mounted on the top of each frame, a support arm pivotally depending eccentrically from each of said discs, a bumper mounted on each of said discs behind said support arms, seats pivotally mounted on the bottom portions of said support arms, means for oscillating said seats about their pivotal supports, and means for periodically oscillating said discs during rotations of said hub, each of said arms having a casing at its bottom end, a horizontal shaft extending rotatively through said each casing and said seats being mounted in open top containers mounted upon the ends of said shafts and comprising the pivotal mounting of said seats, said means for oscillating said seats comprising rods connected to radial links extending from said shafts and to points above the pivots of said arms.

6. A novelty amusement air-ride apparatus having a stationary vertical post and an annular track arranged concentric with said post and having vertical wave-like portions and a hub rotatively mounted on said post with vertical frames extending radially from said hub and being pivotally connected at their bottom portions with said hub and provided with rollers riding said annular track and means for drawing said frames along said track, a horizontal disc horizontally turnably mounted on the top of each frame, a support arm pivotally depending eccentrically from each of said discs, a bumper mounted on each of said discs behind said support arms, seats pivotally mounted on the bottom portions of said support arms, means for oscillating said seats about their pivotal supports, and means for periodically oscillating said discs during rotations of said hub, said latter means comprising projections extending from said discs, abutments mounted on said post and extending into the path traversed by said projections to cause said discs to turn slightly until said projections bypass said abutments and resilient means urging said discs back to their former positions.

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