July 18, 1950 J. S. EVANS 2,516,049

OCCUPANT PROPELLED ROUNDABOUT

Filed April 18, 1946

Fig. 1

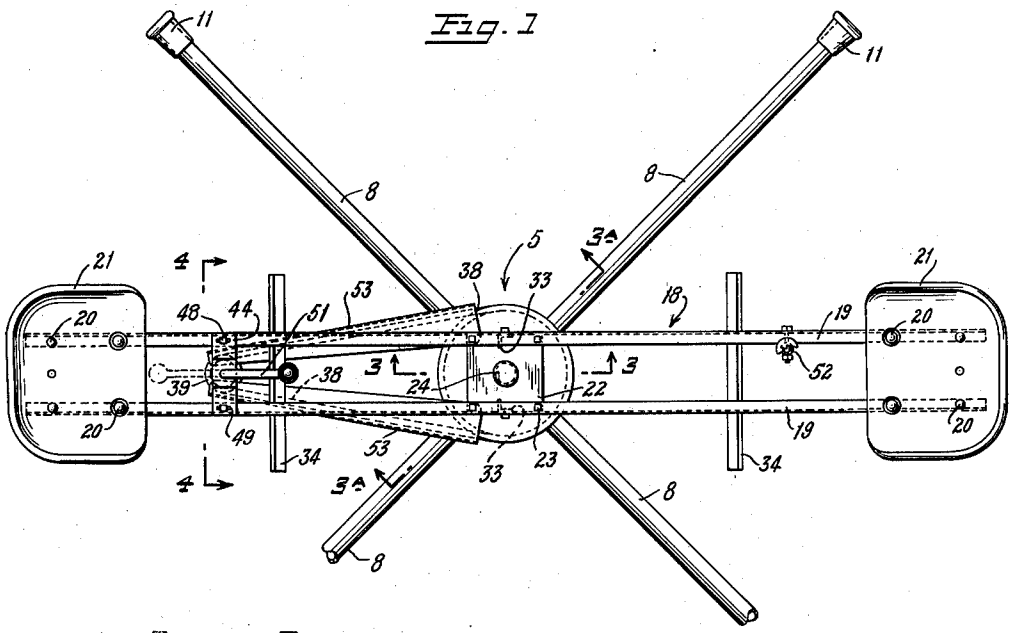
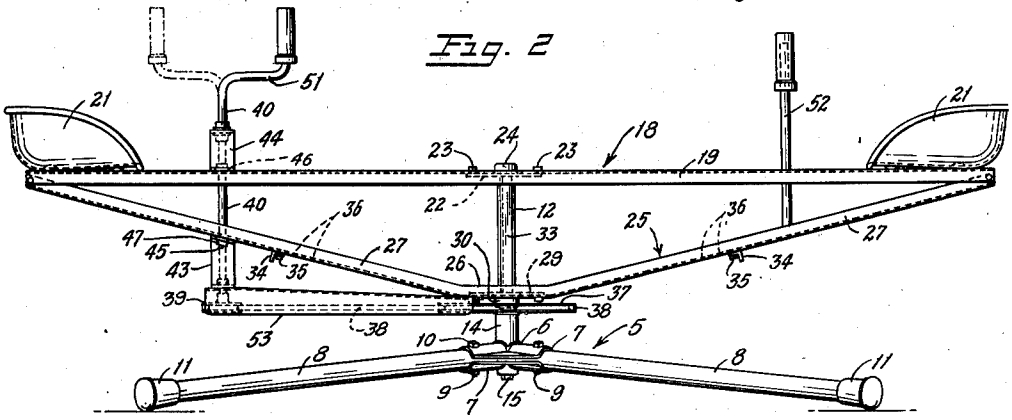


Fig. 2



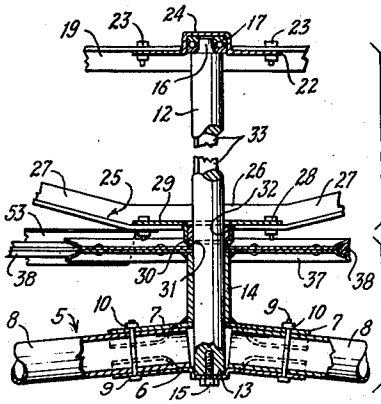


Fig. 3

Fig. 3A

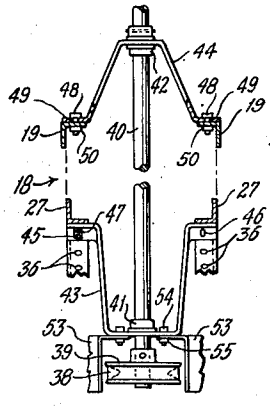


Fig. 4

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OCCUPANT PROPELLED ROUNDABOUT

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5 Claims. (Cl. 272—33)

1

This invention relates generally to amusement devices and more particularly to a horizontally rotating whirl-around device of the type wherein motive power is furnished by a passenger.

One of the objects of the present invention is to provide a novel whirl-around device especially for the enjoyment of small children, which is easy to operate, requires a minimum amount of space, and can be used indoors and outdoors at recreation centers, playgrounds, nurseries, in auditoriums, on lawns, and in large living rooms.

Another object of the invention is to provide a novel whirl-around device which is simple in construction and can be manufactured at a relatively low cost.

Another object is to so construct a device of the above character that a rigid and durable structure is produced by relatively few parts through novel arrangement and association thereof.

A further object is to provide an amusement device having a whirling frame of novel construction which can be safely suspended from the top of a mast for free rotation about the same in a horizontal plane.

A still further object is to provide a novel portable whirl-around device constructed in a minimum number of units that can be assembled and disassembled with facility for easy movement or storage.

The above and further objects and novel features of the invention will more fully appear from the following detailed description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for the purpose of illustration only, and are not intended as a definition of the limits of the invention, reference for this latter purpose being had primarily to the appended claims.

In the drawings, wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is a top plan view of a whirl-around device constructed in accordance with the present invention;

Fig. 2 is a side elevation of said device.

Fig. 3 is an enlarged fragmentary vertical section of the whirling frame shown in Fig. 1 and taken on the line 3—3 thereof, and Fig. 3A is a similar view but of the supporting base shown in Fig. 1 and taken on the line 3A—3A thereof, said views being combined for purposes of clearer illustration; and

2

Fig. 4 is an enlarged vertical transverse section on the line 4—4 of Fig. 1.

Referring to the drawings, 5 indicates a supporting base consisting of a centrally disposed split bracket or spider 6 that is formed with four radially extending tubular arms 7 from which project four tubular metallic, preferably steel, rods 8. Rods 8 are removably secured to spider 6 by suitable means, such as, by bolts 9 which pass through arms 7 and through said rods and have threaded thereon nuts 10. By tightening nuts 10 the two halves of spider 6 are drawn together, thus securely clamping rods 8 therebetween, and since the bolts 9 also pass through said rods the latter are additionally held by said bolts against relative rotation and against accidental endwise displacement from spider 6. The arms 7 of spider 6 are slightly inclined downwardly resulting in a corresponding inclination to rods 8. In this manner the free ends only of rods 8 contact the floor or other foundation, thus providing a more stable support and at the same time locating the spider 6 above the floor line to prevent marring of the floor or rug when the whirl-around device is used indoors. By virtue of the four point contact of rods 8 with the floor or foundation, the whirl-around device can yield somewhat under the load thereon which tends to absorb any shock and, hence, cushion the operation of said device to provide a more comfortable and enjoyable ride. The free ends of rods 8 are preferably provided with rubber tips 11 to hold the whirl-around device against creeping movement during operation thereof and also to eliminate marring of the floor by said rods. It will be understood that the spider 6 may be of one-piece construction, and that solid metallic rods may be used in place of the tubular rods 8 and secured to said spider in any well-known manner and by any suitable well-known means for this purpose. The one-piece construction of spider 6 may be formed by welding together the two complementary parts thereof.

Spider 6 is adapted to fixedly and rigidly support a vertically extending mast 12 which is formed from a suitable material, such as, solid steel shafting. For this purpose, spider 6 is internally provided with a central well 13 (Fig. 3A) to receive and provide a seat for the lower end of mast 12. Mast 12 extends upwardly from well 13 through spider 6 and through an elongated metallic, preferably steel, sleeve or hub 14 which is welded to or formed integrally with said spider and provides a rigid support for said mast,

Mast 12 is removably secured in well 13 and held against relative rotation and upward endwise displacement from spider 6 by suitable means, such as, by a bolt 15 which extends through the wall of said spider and is threaded into said mast. The upper end of mast 12 is provided with a reduced annular portion 16 to receive an anti-friction ball-thrust bearing 17 through the medium of which an elongated horizontal whirling frame indicated generally at 18 is supported by the upper end of mast 12 for relatively frictionless rotation about the latter in a horizontal plane.

The whirling frame 18 comprises a pair of upper relatively long structural steel beams 19, such as, angle irons, which are horizontally disposed in spaced parallel relation and receive therebetween the mast 12. Secured, as by bolts 20, to the opposite extremities of beams 19 are die-stamped, bucket-shaped metallic seats 21 for the riders of the whirl-around devices, said seats also serving to connect said beams together and hold the same in spaced parallel relation. Disposed centrally of beams 19 and between the latter is a rectangular metallic, preferably steel, plate 22 which is adapted to extend across the upper end of mast 12 and is secured, as by bolts 23, to beams 19. Plate 22 is disposed beneath beams 19 so that the weight of the whirling frame 18 and occupants thereof will be taken by said plate and not by the bolts 23. Plate 22 is formed centrally thereof with an inverted annular cup 24 to receive therein the anti-friction ball-thrust bearing 17, said plate also serving to connect beams 19 together and maintain the same in spaced parallel relation. If desired, plate 22 may be welded or riveted to beams 19, and the cup 24 may be formed by a ring or tubular member welded or otherwise suitably secured to the underside of the plate.

Disposed directly beneath beams 19 and serving as rigid compression braces for said beams is a pair of structural steel beams 25, such as, angle irons. Beams 25 are formed with straight central portions 26 which are spaced vertically below and parallel with beams 19, and with upwardly bent angular portions 27 that extend from the straight portions 26 toward beams 19 and are welded, riveted or otherwise suitably secured to opposite ends of the latter. Disposed between beams 25 and secured, as by bolts 28, to the straight portions 26 of said beams is a rectangular metallic, preferably steel, plate 29 (Fig. 3) which is formed centrally thereof with an annular cup 30 having an opening 31 therein to permit mast 12 to extend therethrough. Secured in cup 30, as by a press fit, is a metallic bushing 32 which closely surrounds mast 12. If desired, plate 29 may be welded or riveted to beams 25 and bored to receive mast 12, and the cup 30 may be formed by a ring or tubular member welded or otherwise suitably secured to either side of said plate. Also, a ball, roller, or needle bearing of any well-known design may be substituted for the bushing 32, if desired.

The pairs of upper and lower beams 19 and 25, respectively, are connected together centrally thereof and further re-enforced by vertically extending structural braces 33, such as, angle irons, which are bolted, but may be welded or riveted, to said beams. Additional similar braces may be provided at spaced points along the beams 19, 25, if desired.

It will thus be noted that the whirling frame 18 is rotatably suspended from the top of mast 12 through the medium of the plate 22 and thrust bearing 17, and is guided for rotation in a horizontal plane without tilting thereof by the bushing 32 and bracing beams 25. It will further be noted that by virtue of the angularly arranged lower bracing beams 25, the whirling frame 18 is rigidly constructed and has a high factor of safety to safely support children of various weights.

Foot rests 34 are provided forwardly of seats 21 for the occupants of the whirling frame 18. These foot rests may be of any suitable form and as herein shown, are in the form of structural steel members, such as angle irons. Foot rests 34 project beyond opposite sides of the whirling frame 18 and are adjustably secured to the angular portions 27 of the lower beams 25 by bolts 35 which may be inserted in any selected pair of a series of longitudinally spaced openings 36 (Fig. 4) formed in beams 25 to locate said foot rests at a desired position forwardly of seats 21.

Motive power to rotate whirling frame 18 about mast 12 is supplied by the occupant of one of the seats 21, and for this purpose a large diameter pulley 37 is located between said frame and base 5 and is fixed against rotation, as by welding to the upper end of sleeve 14. If desired, sleeve 14 may constitute the hub of pulley 37 and be welded or otherwise suitably secured to spider 6. Pulley 37 is bored to receive mast 12 and is suitably grooved to receive suitable flexible endless means, such as a V-belt 38 which passes around said pulley and around a smaller diameter suitably grooved pulley 39. Pulley 39 is secured to the lower end of a vertically extending shaft 40 which is conveniently disposed forwardly of one of the seats 21 and between beams 19, 25. Shaft 40 is journalled adjacent opposite ends thereof in suitable anti-friction bearings 41 and 42 (Fig. 4) that are carried by U-shaped brackets 43 and 44, respectively.

Bracket 43 is secured to the angular portions 27 of the lower beams 25 by bolts 45 which extend through suitable circular openings in said beam portions and through elongated openings 46 in said bracket and have threaded thereon nuts 47. The elongated openings 46 in bracket 43 enables longitudinal adjustment of said bracket, shaft 40 and pulley 39 relative to frame 18 to properly tension belt 38. Bracket 44 is inverted and is secured to the beams 19 by bolts 48 which extend through elongated openings 49 (Fig. 1) in said bracket and through suitable circular openings in said beams and have threaded thereon nuts 50. The elongated openings 49 enable longitudinal adjustment of bracket 44 relative to beams 19 to properly align the bearing 42 with the bearing 41 in all positions of adjustment of the latter. The upper end of shaft 40 is provided with a crank handle 51 for rotating said shaft and pulley 39 thereon. Upon rotation of shaft 40 and pulley 39, the stationary pulley 37 will cause belt 38 to exert a lateral pull on the whirling frame 18 at one end thereof and thus rotate said frame about mast 12.

A fixed handle or holding member 52 is provided for the occupant of the other seat 21, said handle being in the form of a steel rod which is conveniently disposed forwardly of said seat and extends upwardly between beams 19, 25 and is secured in any suitable manner to two of said beams. It will be understood that a duplicate operating mechanism may be provided for the occupant of the other seat 21, whereby the whirling frame 18 may be rotated by either one of the

occupants or by both occupants. Belt guards **53** are provided to safeguard the occupants against possible injury by belt **38**, said guards being secured at corresponding ends thereof to the lower beams **25** by two of the bolts **28**, and at the opposite ends thereof to the bracket **43** by bolts **54** and nuts **55** (Fig. 4).

In the illustrated embodiment the level of the seats **21** is approximately fourteen inches from the floor line, thus enabling small children to mount and dismount the whirling frame without assistance and eliminating all danger of any serious mishaps. The overall length of the base rods **8** is the same as the length of the whirling frame, i. e. approximately six feet in the illustrated embodiment. Thus, the whirl-around device cannot tilt or tip when the occupants thereof are of unequal weights, and requires but a small amount of floor space, thereby enabling use of said device indoors as well as outdoors.

There is thus provided a novel self-propelled whirl-around device which is particularly adapted for the enjoyment and amusement of small children. The whirl-around device is simple and yet strong in construction, it can be inexpensively manufactured, it requires little effort to operate the same, and it may be used and operated by small children with the utmost safety and with little or no attention.

While only a single embodiment of the invention has been illustrated in the accompanying drawings and described in the foregoing specification, it is to be expressly understood that said invention is not limited to said embodiment. Various changes may be made in the mechanical details, some of which have been suggested in the foregoing description, and in the design and arrangement of the parts illustrated, without departing from the spirit and scope of the invention, as will now be apparent to those skilled in the art. For a definition of the limits of the invention, reference is had primarily to the appended claims.

What is claimed is:

1. In an amusement device of the character described, a stationary supporting base, a fixed vertical mast supported by said base, an elongated frame rotatably supported on said mast, said frame comprising two unitary horizontal beams disposed on opposite sides of said mast in spaced relation thereto and a unitary brace beneath each of said beams and secured thereto at opposite ends thereof, each brace having a substantially horizontal central portion and end portions inclined upwardly therefrom, means including seats at opposite ends of said beams for rigidly connecting the latter together in spaced relation to each other, a plate-like member secured to and spanning the space between the central portions of said beams, bearing means interposed between said plate-like member and the upper end of said mast whereby the frame is rotatably supported, a second plate-like member secured to and spanning the space between the central portions of said braces and having a flanged central opening for receiving said mast, and bearing means in said opening closely surrounding a cylindrical portion of said mast.

2. An amusement device as defined in claim 1 wherein said first-named bearing means is an anti-friction vertical thrust bearing mounted in a recess in said first-named plate-like member.

3. An amusement device as defined in claim 1 comprising a crank rotatably supported by said frame near one of said seats and having a vertical shaft between said beams and braces, a pulley mounted on and rotatable with said shaft below the frame, a stationary pulley mounted on said base below the frame, and a flexible member passing around said pulleys in operative engagement therewith.

4. An amusement device as defined in claim 1 wherein said stationary supporting base comprises a plurality of legs projecting radially from said mast, means for rigidly securing the adjacent ends of said legs together including upper and lower plates having grooves fitting the contour of said legs, said upper plate having a hollow tube secured to and projecting vertically from the center thereof for slidably receiving the lower end portion of said mast, said mast extending through the tube and upper plate and between the adjacent ends of said legs for engagement with said lower plate, and means for securing said mast to the lower plate.

5. An amusement device as defined in claim 4 comprising a crank rotatably supported by said frame near one of said seats and having a vertical shaft between said beams and braces, a pulley mounted on and rotatable with said shaft below the frame, a stationary pulley mounted on said tube below the frame, and a flexible member passing around said pulleys in operative engagement therewith.

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