AMUSEMENT DEVICE

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The present invention is related generally to amusement devices, but more particularly to one of the captive types which is under control of the individual operator so that skillful operation of the device presents novel thrills and experiences to those operating the device.

The primary object of the present invention is to provide a novel and improved portable type of amusement device in which a new ride or thrill is experienced by the operator thereof by furnishing certain controls through the manipulation of which the device may travel over a constantly changing path.

A further object of the invention is to provide a novel and improved amusement device in the form of a flying scooter in which a stationary stabilizer and a pivoted rudder are attached at the opposite ends of the scooter in close proximity with respect to each other so that the device is effectively responsive to the manipulation of the rudder to change the course of its travel.

Another object of the invention is to provide an improved amusement device of the captive type which is suspended from two converging cables. These cables in turn are flexibly connected to a third cable which embraces or surrounds the scooter so as to assure strength and safety.

A still further object of the invention is to provide a novel and improved amusement device of the revolving captive type suspended from a revolving structure in which a rudder and stabilizer are located in the fore and aft positions respectively and in close proximity with respect to each other. The rear end of the rudder proper overhangs the scooter so that the same may be grasped by the hand of the operator in the scooter for controlling the operation of the device.

A further object of the invention is to provide a novel and improved amusement device of the revolving captive type which is provided with a stationary stabilizer and a pivoted rudder. The rudder in this instance is of the balanced type being pivoted in its approximate longitudinal center on a vertical axis so that the rear portion thereof overhangs the scooter and balances the forward portion of the same so as to permit easy manipulation in the control.

A further object of the invention is to provide a novel and improved portable type of amusement device in which the supporting standard or tower and the rotating head are made in sections so that the parts thereof may be folded in compact form for transportation or quickly assembled.

These and other objects of the invention are accomplished by providing a construction and arrangement of the various parts in the manner hereinafter described and particularly pointed out in the appended claims.

Referring to the drawings:

Fig. 1 is a side elevational view of my improved amusement device with certain of the beams of the rotating structure omitted for the purpose of clearness;

Fig. 3 is a fragmentary top plan view of the device shown in Fig. 1;

Fig. 3 is a cross sectional view taken on the line 3-3 in Fig. 2;

Fig. 4 is a reduced top plan view of the rotating structure showing diagrammatically the top chord bracing tie rods;

Fig. 5 is an enlarged fragmentary cross sectional view taken on a vertical plane in the top portion of the rotating shaft and its associated parts;

Fig. 6 is a fragmentary cross sectional view taken on the line 66 in Fig. 5;

Fig. 7 is a side elevational view of the flying cab or scooter;

Fig. 8 is a cross sectional view taken on the line 8-8 in Fig. 7;

Fig. 9 is a top plan view of one of the quarter sections of the supporting standard or tower;

Fig. 10 is a perspective view of the section shown in Fig. 9; and

Fig. 11 is a fragmentary cross sectional view illustrating the construction of the thrust and radial bearing which supports the lower end of the rotating shaft.

In illustrating one form of my novel and improved portable type of amusement device, I have shown the same as comprising a detachable or sectional tower or standard generally indicated by the reference character 15. Rotatably mounted on the tower 15 is a rotating head generally indicated by the reference character 16. The details of the parts of these mechanisms will hereinafter be more fully described. Suspended from and between the adjacent arms of the rotating head 16 by means of converging suspended cables 17 are my improved flying scooters generally indicated by the reference character 18. Each of these scooters comprises a body portion or cab 19 which is provided with seats 20 in the rear thereof and an opening as shown at 21 on one side thereof to permit easy entrance to the cab. Secured to the opposite ends of the cab 19 are vertically extending front and rear pipes 22 and 23 respectively which have their upper ends connected together by a horizontal brace pipe 24.
located at a considerable distance above the cab 19 proper. Rigidly secured to the pipe 22 is a relatively large stationary stabilizer 25 occupying the longitudinal direction in the center of the cab. Pivoted mounted to the front pipe 23 and extending forwardly and rearwardly with respect thereto is a pivoted rudder 26. This rudder 26 is pivoted on a vertical axis in the longitudinal center of cab or scoolet 19 and has its rear end as shown at 27 overhanging the cab 19 so that the same may be gripped as shown at 28 by the operator for deflecting the rudder in either direction. It will be noted that both the stabilizer 25 and rudder 26 have the major portions of their areas extending above the cab body 19 so that full advantage of these air surfaces may be taken. Encircling the cab 19 and extending through the forward and rearward pipes 22 and 23 respectively is a cable 29 which has its ends fastened together by means of U-bolt clamps 30 beneath the cab, as clearly shown in Fig. 7 of the drawings. The diverging cables 11 are connected by a bearing ring 31 and a bearing sleeve 32 to the cable 29 at a point in the approximate center of and above the pipe 24.

My improved portable or collapsible supporting tower and rotating head are made of structural steel sections securely and dismantling for transportation of the device.

The tower proper is preferably made in four sections, generally indicated by the reference character 33, illustrated in Figs. 9 and 10 of the drawings. These quarter sections are identical and comprise corner angle members 34, the lower end of which is secured by means of plates 35 to upwardly diverging angle members 36. Secured to the upper ends of the diverging members 36 by means of plates 37 are converging angle members 38. The upper ends of these angle members 38 are secured in spaced relationship with respect to the upper end of the corner angle member 34 by a right angularly formed corner plate 33. The plates 37 are connected by cross angle members 30 to an intermediate portion of the corner angle member 34 to reinforce the strength of these quarter sections 33 of the tower 15. The upper ends of these quarter sections 33 are detachably fastened together by a substantially square cap plate 43 through the medium of bolts 44. The cap plate 43 is provided with an outwardly diverging horizontal flange 42 which extends around the four sides thereof. These bolts 44 extend through the cap plate 43, the four corner plates 39 and the corner members 34 of the quarter sections 33 as clearly shown in Figs. 5 and 6 of the drawings. Riveted to the flange 42 of the cap plate 43 is a square plate 46 which has a large aperture in the center thereof. Secured to and extending around the edge of the plate 45 is a square angular flange 46 for the purpose hereinafter described. The lower end of the sections 33 are provided with foot plates 47 which are adapted to rest on spaced angular blocks 49 mounted in the ground. Mounted in the axial center of the supporting tower 15 is a main tubular shaft, indicated by the reference character 50 which has its lower end secured to a bracket 51, which in turn, is secured by means of bolts 52 to a relatively large gear 53. (See Figs. 5 and 11.) Secured to the large gear 53 is a stub shaft 53 which in turn is journaled in the bearing bracket 54 through the medium of a radial and thrust anti-friction bearing 55. The bracket 54 is secured to two spaced apart transverse I-beams 56 which in turn have their opposite ends secured to the cross I-beams 48 as clearly shown in Figs. 11 and 14 of the drawings. Embracing the main tubular shaft 57 and extending from a point just below the upper end of the tower 15 is a reinforcing tubular shaft 57. This shaft 57 is secured to the main shaft 50 and extends upwardly to a point adjacent the top thereof. Embracing the tubular shaft 57 and secured thereto is a third tubular shaft or sleeve 58 which similarly reinforces the main drive shaft 50 and has secured thereto an anti-friction bearing hereinafter described for sustaining the radial load. Mounted between spaced apart collar 59 and secured to the tubular sleeve 58 are oppositely arranged roller races 60 of an anti-friction roller bearing 61 of the opposed type. This anti-friction bearing 61 is housed in a circular housing 62 having opposed upper and lower plates 63 and 64 respectively. The lower plate 64 is a square plate and adapted to loosely nest within the square frame 45 as clearly disclosed in Figs. 5 and 6 of the drawings. Secured to the upper end of the main tubular shaft 50 is a collar 65 which has an annular projecting radial flange 66 to which is secured a plate 67. The plate 67 has formed on its periphery a means to rapidly assembling and disassembling integrally therewith for the purpose hereinafter described. Spaced some distance below the plate 66 and secured to the outer sleeve 56 is a collar 66 which has an annular and radially projecting flange 70 formed integrally therewith. Secured to the outer sleeve 56 is a horizontal circular plate 71. Between this plate 71 and the tongues 67 are the arms of the rotating structure or head hereinafter described.

In the rotating structure illustrated in the drawings, I have shown the same as comprising ten radially projecting arms, but it will of course be understood that a larger or smaller number of arms may be provided depending upon the size or diameter of the device as a whole. In this connection it will be observed that a certain distance 72 be maintained between each succeeding arm 72 and that the number of arms employed must necessarily be taken into consideration in determining the diameter of the rotating structure. Each of these arms comprises a top pair of upwardly inclined angle members 72 which are radially disposed with respect to the axis of the shaft 69, and a pair of lower upwardly inclined angle members 73 which converge at their outer ends toward the angle members 72 to form a apex 74, to which the cables or cords 77 are attached. These top and bottom angle members 72 and 73 respectively, are braced by a plurality of truss braces 75 throughout their entire length. The inner ends of the top angle members 72 are secured to the top plate 67 by bolts 76. The inner ends of the angle members 72 and 73 are further braced with respect to the axis of the shaft 69 by angle members 77 through the medium of bolts 78 and 79. The inner ends of the angle members 73 are detachably secured in the circular plate 71 by wedge members 79 and removable tapered pins 80 which are adapted to be inserted in registering apertures 81 in the connecting angle members of each of the angles 73, wedge members 79 and plate 71. These tapered pins 80 are held in position by cotter pins 81. Adjacent arms of the rotating structure are braced with respect to each other by a rectangular bracing structure, 82.
generally indicated by the reference character 82 which are vertically disposed and connected to intermediate ends of each of the adjacent arms as clearly shown in Figs. 2 and 3 of the drawings. Each of these arms are further braced by tie rods 83 which connect portions adjacent the outer ends of each arm, as shown at 84, to portions of the adjacent arms a short distance from the axis of the shaft as shown at 85 and clearly diagrammatically disclosed in Fig. 4 of the drawings.

The main shaft 56 is driven to revolve the rotating head 16 by an electric motor 86 which in turn operatively drives a transmission mechanism generally indicated by the reference character 87. This transmission mechanism in turn operatively drives the main gear 53.

Summarizing the operation of my improved portable and collapsible amusement device, it will readily be seen that by constructing the tower or standard in quarter sections and making the arms of the rotating tower detachable, the various parts of the device may be quickly assembled or dismantled and conveniently packed for transportation purposes. It will also be noted that in the construction of my improved flying scooter that by providing a rudder which extends into the cab within the grasp of the operator and with equal portion thereof extending rearwardly and forwardly of the pivot, the same is balanced and permits easy operation of the rudder from the operator's seat. Obviously when the rotating head is revolved the centrifugal force causes all of the flying scooters to swing outwardly and by manipulation of the individual rudders, the cab of the scooter may be quickly deflected above or below its normal course. By intermittently deflecting the rudder one way and then quickly the other way, exceptional thrills are experienced by the operator. In this connection it will be noted that one of the important features of the invention embodies the relatively close positioning of the stabilizer 25 with respect to the rudder 26 so that upon the manipulation of the rudder a quick response to change the direction is immediately effected. Another essential feature embodied in the present invention includes the arrangement of the cable 29 which completely embraces the cab or body 19 of the scooter so as to insure safety and maintains each scooter within a sufficiently confined area so as to prevent contact with the next adjacent scooter, but at the same time affords sufficient flexibility to permit the scooter to deviate forwardly and rearwardly.

While in the above specification I have described one embodiment which my invention may assume in practice, it will of course be understood that the same is capable of modification and that modification may be employed without departing from the spirit and scope of the invention as expressed in the following claims.

What I claim is my invention and desire to secure by Letters Patent is:

1. A flying scooter comprising a body, a vertically extending pipe secured to the rear end of said body, a second vertically extending pipe secured to the forward end of said body, a stationary stabilizer secured to one of said pipes, a rudder pivoted to the other of said pipes, and a cable extending through said pipes and encircling said body.

2. A flying scooter comprising a body, a vertically extending pipe secured to the rear end of said body, a second vertically extending pipe secured to the forward end of said body, a stationary stabilizer secured to one of said pipes, a rudder pivoted to the other of said pipes and extending over said body, and a cable extending through said pipes and encircling said body.

3. A flying scooter comprising a body for holding passengers therein a vertically extending pipe secured to the rear end of said body, a stationary stabilizer secured to said pipe, a second vertically extending pipe secured to the forward end of said body, a rudder pivoted on said second named pipe having its rear end extending over a portion of said body whereby an operator in said body may grasp said rudder for operating the same, a horizontal pipe connecting the upper ends of said first named pipes, and a cable extending through said first named pipes and completely embracing said body.

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