July 18, 1961 N. P. LEW'CHUK 2,992,824

FLYING SAUCER AMUSEMENT RIDE

Filed Dec. 2, 1957 3 Sheets-Sheet 1

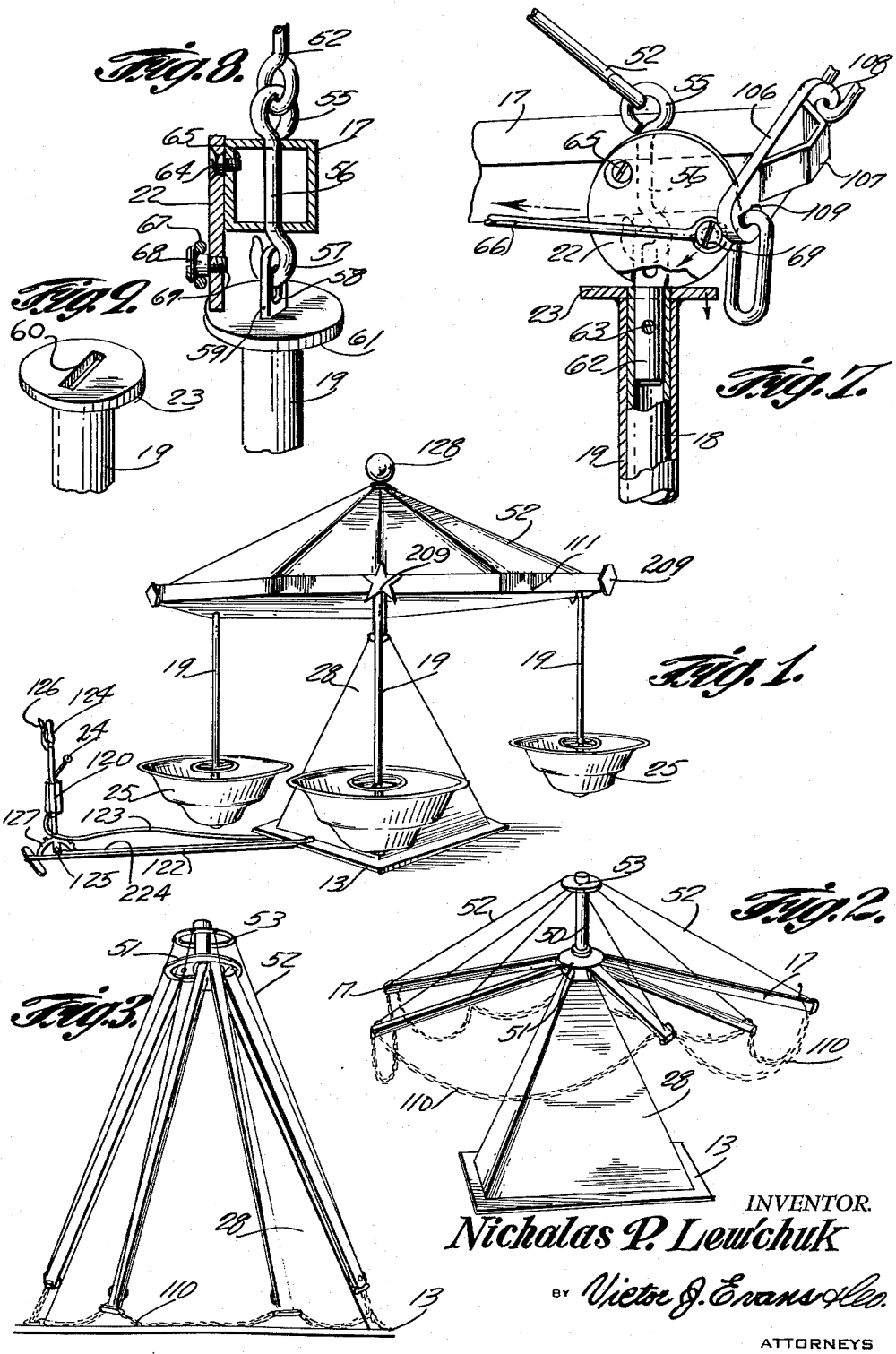

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Fig. 1A.

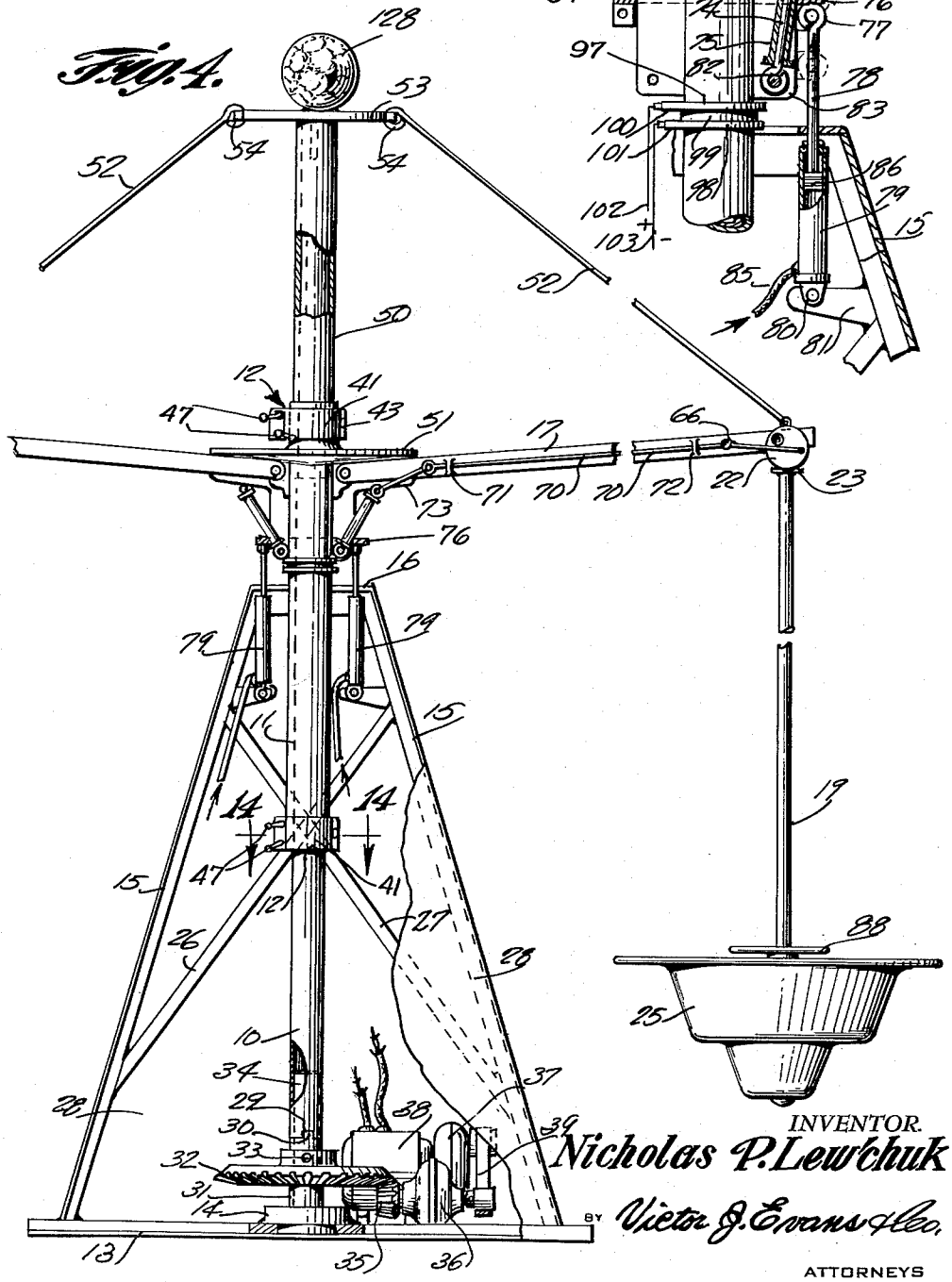
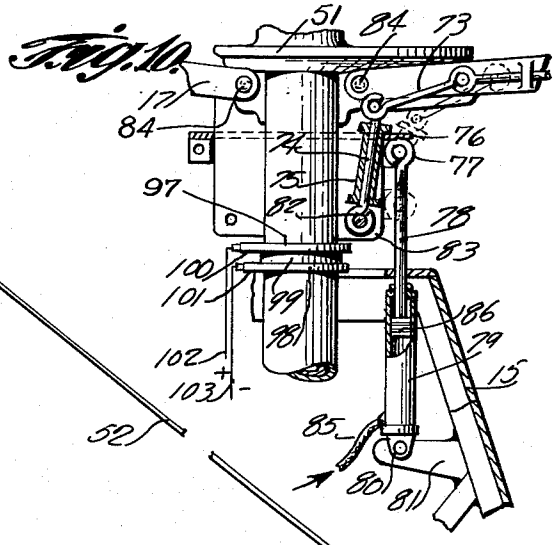


Fig. 1B.



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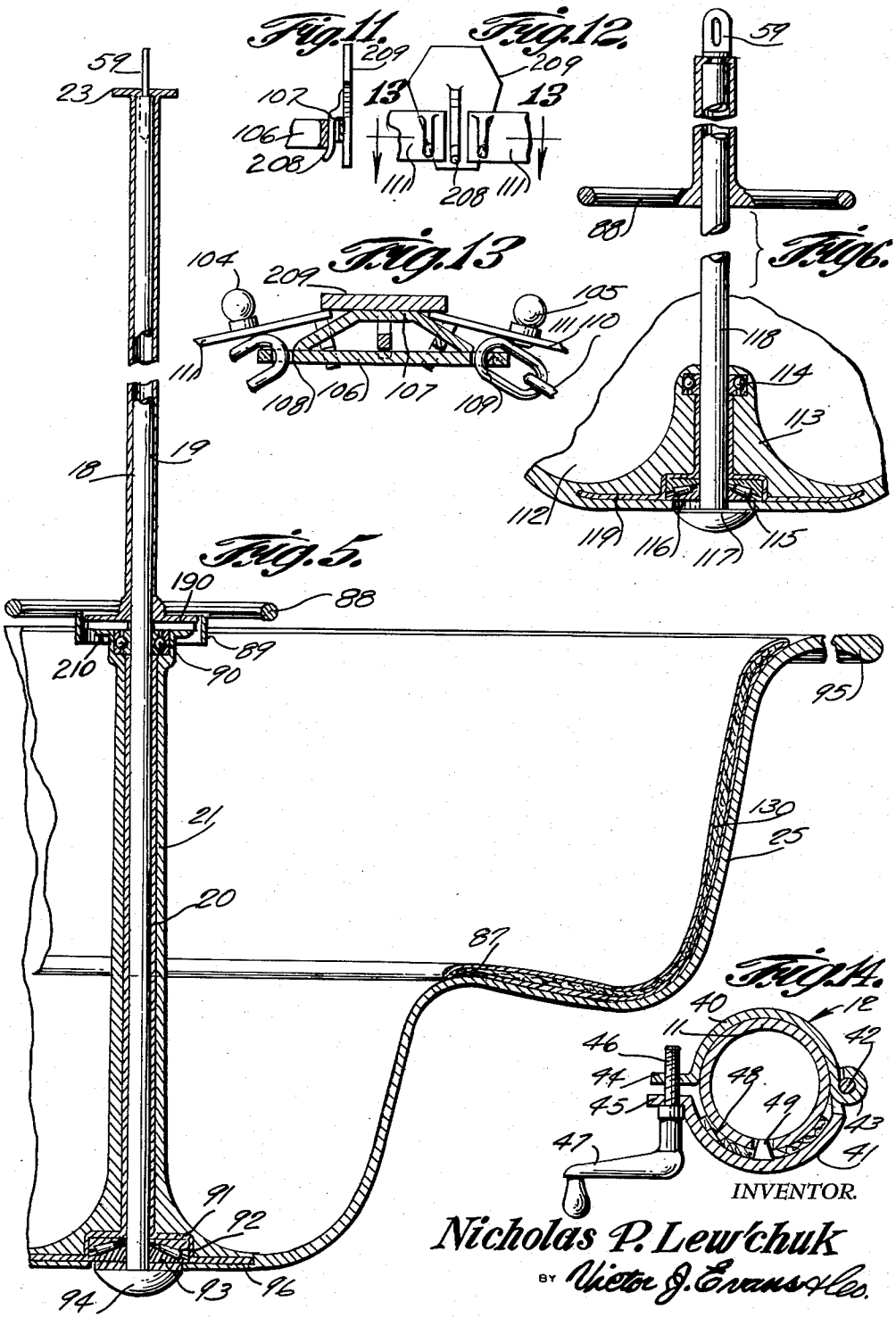

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FLYING SAUCER AMUSEMENT RIDE

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This invention relates to rides, such as used in amusement parks, carnivals, fairs, and the like, and in particular a plurality of circular devices having seats therein, the devices being in the form of saucers, suspended by rods carried on the ends of folding arms rotatably mounted on a mast or support, with the saucer carrying parts rotated around the mast by a motor and gear assembly and with the parts provided with manually actuated braking means.

The purpose of this invention is to provide a flying saucer ride wherein patron carrying saucers swing outwardly and inwardly as they are carried around a circle and wherein the individual saucers are rotated by riders gripping wheels positioned in the centers of the saucers.

Various types of amusement devices have been provided for amusement parks, carnivals, fairs, and the like and in some gliders occupants of small cars guide the cars inwardly and outwardly with rudders. The travel of such devices however, is limited to zig-zag paths. With this thought in mind this invention contemplates an amusement ride having individual carriages or saucers mounted to swing inwardly and outwardly as they are actuated around a mast and in which the individual saucers are rotated, or operated with twirling actions, or accelerated or retarded by occupants thereof thereby supplying an additional thrill or thrills to the ride.

The object of this invention is, therefore, to provide means for suspending flying saucers whereby the saucers travel in a circle around a mast and wherein each individual saucer may be rotated by occupants thereof.

Another object of the invention is to provide an amusement ride in which the parts are collapsible to nested positions around a mast to facilitate storing and shipping and wherein the parts may be set up or taken down in a comparatively few minutes.

Another important object of the invention is to provide an amusement device having flying saucers carried by arms rotating on a mast in which braking means is provided to restrict wild or excessive movements of the saucers.

A further object of the invention is to provide an amusement device having flying saucers rotating about a mast and swinging inwardly and outwardly in relation to the mast in which the device is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a telescoping mast mounted in a base having upwardly converging sides with arms pivotally mounted on and extended outwardly from the mast and with flying saucers rotatably mounted on rods depending from the ends of the arms and wherein movement of the flying saucers is controlled by braking means on the mast.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

FIGURE 1 is a side elevational view showing the improved flying saucer ride.

FIGURE 2 is a side elevational view, similar to that shown in FIGURE 1 with arms for carrying the flying saucers partly folded.

FIGURE 3 is a side elevational view also similar to that shown in FIGURE 1 showing the parts completely folded and showing the framework of the device with the flying saucers and other parts omitted, and also showing the device with the parts on an enlarged scale.

FIGURE 4 is a side elevational view of the flying saucer ride with parts broken away illustrating the assembly of the braking elements and rotating parts and with the parts shown on an enlarged scale.

FIGURE 5 is a cross section through one of the flying saucers with one side of the saucer broken away and with the parts shown on an enlarged scale.

FIGURE 6 is a vertical section through one of the flying saucers with parts broken away illustrating a modification wherein a radial bearing positioned in the upper part of the saucer shown in FIGURE 5 is spaced upwardly from the thrust bearing in the base of the flying saucer.

FIGURE 7 is a view illustrating a brake assembly at the upper end of each of the flying saucer supporting rods with parts broken away and with the parts shown on an enlarged scale.

FIGURE 8 is a view taken substantially at a right angle to that shown in FIGURE 7 showing the relative positions of the brake cams and discs at the upper end of each of the flying saucer supporting rods.

FIGURE 9 is a view showing the brake disc at the upper end of each of the flying saucer supporting rods, with other parts omitted.

FIGURE 10 is a sectional view illustrating the hydraulically actuated ring extended around the mast for operating brake actuating levers.

FIGURE 11 is a cross section through an end of one of the flying saucer carrying arms showing a hook for attaching an ornament to the end of the arm.

FIGURE 12 is a view looking toward the back of the ornament shown in FIGURE 11 showing the hook between the arms of a supporting member.

FIGURE 13 is an assembly view showing the ornament carried by a bracket on the end of the arm and also showing lights at the sides of the ornament, the figure being taken on line **13—13** of FIGURE 12.

FIGURE 14 is a sectional plan taken on line **14—14** of FIGURE 4 showing a brake or clamp for securing the upper telescoping section of the mast to a lower supporting section.

The flying saucer ride of this invention includes a mast having a lower section **10**, an upper tubular section **11** slidably mounted over the section **10** and retained in adjusted position thereon by a pair of clamps **12**, a base **13** upon which the section **10** of the mast is mounted by means of a thrust bearing in a collar or hub **14**, angle iron struts **15** positioned at the corners and extended upwardly from the base plate **13** in converging relation to an upper plate **16**, arms **17** pivotally mounted on and extended from the upper section **11** of the mast, rods **18** extended through upper sleeves **19** and lower sleeves **20** suspended from ends of the arms **17**, braking cams **22** mounted on ends of the arms **17** and positioned to engage discs **23** on the upper ends of the sleeves **19** on the rods **18**, the discs being actuated by a hand lever **24**, and flying saucers or circular carriers **25** rotatably mounted on the rods **18** and positioned to travel around the mast with the saucers swinging outwardly and inwardly and also spinning around the rods **18**.

The supporting mast is retained in an upright position by the angle iron frame and the corner angle irons are reinforced with diagonal braces **26** and **27** and also by cover plates **28** that extend completely around the frame covering the angle irons, as shown in FIGURE 2.

The lower end of the lower section **10** of the mast is provided with a transversely disposed groove **29** in which a tongue **30** extended from a short section **31** is positioned and, as shown in FIGURE 4, a large beveled gear **32** is secured on the section **31** with a set screw **33**.

The section of the shaft 31 or mast extends into the thrust bearing 14 and the parts are retained in alignment by an inner pin 34 as indicated in FIGURE 4.

The beveled gear 32 meshes with a beveled pinion 35 extended from a gear housing 36 which is actuated by transmission means from a reduction gear 37 on the shaft of a motor 38. The transmission means may be a belt 39, or the like. By this means the mast is rotated by the motor through the gears whereby the saucers 25, suspended from the arms 17, are carried around in a circle.

The clamp 12 on the lower end of the section 11 is formed with semi-circular sections 40 and 41 which are pivotally connected by a pin 42 extended through hubs 43 and the sections 40 and 41 are provided with flanges 44 and 45 through which a threaded stud 46 extends and with the stud threaded in the flange 44 or extended through a nut thereon the parts are urged into clamping relation with the lower tube or section 10 of the mast by turning the stud 46 with the hand crank 47. The section 41 of the clamp is provided with brake linings 48 and the lining is retained in position by clips 49. The upper end of the sleeve 11 is provided with a similar clamp 12 by which an upper section 50 is secured on the upper end of the mast.

The upper portion of the sleeve 11 is also provided with a disc 51 that limits upward movement of the arms 17 and, also as shown in FIGURE 4, the arms 17 are maintained in upwardly disposed positions by guy wires 52 that extend from openings in a disc 53 on the upper end of the section 50 of the mast. The guy wires 52 are provided with eyes 54 that are positioned in the peripheral edge of the disc 53.

The lower ends of the guy wires or braces 52 are attached to eyes 55 on upper ends of links 56, the lower ends of which are provided with hooks 57 that are secured in slots 58 in flat sections 59 extended through slots 60 in the discs 23 on the upper ends of the sleeves 19. The end 59 is integral with a stud 62 which is secured in the upper end of the inner tubular rod 18 by a pin 63. The links 56 extend through the extended ends of the tubular arms 17 as shown in FIGURE 8.

The brake cam 22 is pivotally mounted on a shoulder 64 of a screw 65 that is threaded in a side wall of the arm 17 and the cam is actuated by a rod 66 having an eye 67 on the end, the eye 67 being positioned on a shoulder 68 of a screw 69 and the rod 66 being connected to a rod 70 slidably mounted in eyes 71 and 72 on the arms 17. The inner end is connected to a link 73 and the inner end of the link 73 is connected to a rod 74 on which a roller 75 is positioned. Similar connections are provided from cams of each of the arms 17 and the rollers 75 are positioned to engage a ring 76 mounted in eyes 77 on the upper ends of piston rods 78 extended from cylinders 79, the lower ends of which are pivotally mounted with pins 80 on arms 81 extended inwardly from the angle irons 15 of the supporting structure. The rods 74 are pivotally mounted by pins 82 in ears 83 which extend from the disc 51. The arms 17 are also pivotally mounted on the ears or webs 83 by pins 84.

With the parts assembled as illustrated and described the application of fluid under pressure through tubes or hose 85 to the lower ends of the cylinders 79 drives the pistons 86 upwardly moving the ring 76 upwardly on the rollers 75, thereby drawing the rods 70 and 66 inwardly, and with this movement the cams are rotated in clockwise directions, from the positions shown in FIGURE 4 frictionally engaging upper surfaces of the discs 23 and moving the sleeves 19 downwardly so that the braking discs 190 on the lower ends of the sleeves 19 engage the braking discs 210 on the upper ends of the sleeves 21 thus retarding rotation of the flying saucers.

The flying saucers are rotated by occupants of the saucers positioned on seat portions 87 thereof and gripping a hand wheel 88 on the lower end of the sleeve 19. Since the sleeves 19 and hand wheels 88 do not rotate the rotation of the saucers is accomplished by pulling on the wheels 88 and manually pulling themselves and the saucers so that the saucers will rotate about the rods 18. The occupants can pull in either direction so that the saucers can rotate clockwise or anti-clockwise. The wheel is provided with an annular band or shield 89 that extends over the upper bearing 90 on the tubular rod 18. The lower end of the sleeve or hub 21 of the flying saucer is provided with an annular recess 91 in which a thrust bearing 92 is positioned, and the thrust bearing rests upon a lower bearing race 93 on a head 94 at the lower end of the tubular rod 18.

The flying saucers, which are preferably made of plastic, reinforced Fiberglas, or other reinforced plastic may also be made of metal or other suitable material and the material is reinforced with a ring 95, on the peripheral edge and also with an enlarged steel disc 96 embedded in the lower portion around the bearing 92.

The flying saucers may be of any suitable size and as many as may be desired may be suspended by arms 17.

The upper sleeve 11 may be provided with spaced commutator bars or rings 97 and 98, which are mounted on an insulating sleeve 99 and the rings are positioned to be engaged by brushes 100 and 101 from which wires 102 and 103 extend. From the rings 97 and 98 wires may extend to a source of electric current and the wires 102 and 103 may extend to electric lights, such as the lights 104 and 105 on the outer ends of the arms, as shown in FIGURE 13.

The ends of the arms 17 may also be provided with cross bars 106 on the outer surfaces of which are brackets 107 and in the ends of which openings 108 and 109 are provided for links of chains 110 that extend between ends of the arms, as shown in FIGURE 2. The brackets 107 are positioned to receive hooks 208 on ornaments 209 that may be displayed at ends of the arms 17. It will be understood that the ornaments may be of any suitable design and may be located at suitable points on the amusement device. The lights 104 and 105 are positioned on ends of bands 111 extended between ends of the arms.

In the design illustrated in FIGURE 6 flying saucers 112 are provided with relatively short hubs 113 with bearings 114 in upper ends of the hubs and with thrust bearings 115, similar to the bearings 92 positioned with the lower races 116 on the heads 117 of the tubular rods 118, similar to the rods 18. In this design the material of the flying saucer is reinforced with webs 119 or other suitable means. In this form of the invention no means for braking the rotation of the saucers is provided. Rotation and braking of the saucers being accomplished by the occupants of the saucers grasping the hand wheel 88.

The brake discs 22, which are eccentrically mounted on extended ends of the arms 17 are actuated by the fluid pressure cylinders 79 and the fluid to the cylinders is controlled by the hand lever 24. The hand lever 24 extends from the control box 120 extended upwardly from a support 122 and connected to the hydraulic cylinder 79 by a hose connection 123. The amusement ride is started and stopped by a hand lever 124 that is pivotally mounted by a pin 125 on the end of the support 122 and is connected by a control rod 224 that actuates the transmission means, previously referred to. The hand lever 124 is provided with a handle 126 that coacts with an arcuate ratchet bar 127 that holds the lever 124 in both starting and stopping positions.

The upper end of the mast may be provided with a ball 128 having reflecting surfaces thereon.

The amusement device or ride can be actuated by an electric motor, such as the motor 38 or it may be driven by a gasoline engine or by hydraulic or other fluid pressure means.

Operation

The parts of the amusement device are readily col-

lapsed as illustrated in FIGURES 2 and 3 with the flying saucers removed and nested and with the telescoping members **10**, **11**, and **50** retracted whereby the complete device occupies comparatively small space.

In use the parts are set up as illustrated in FIGURES 1 and 4 with the flying saucers depending from arms **17** and with extended ends of the arms supported by guy wires or rods **52** extended from the member **53** to ends of the arms.

Upon operation of the motor **38** the gears **32** and **35** rotate the mast, the lower end of which is positioned in the thrust bearing **14** and the upper part of which is rototably mounted in a bearing in the plate **16** at the upper end of the support. By this means the flying saucers **25** travel around the support or base and by gripping the hand wheels **88** occupants of the flying saucers may rotate the flying saucers around the supporting rods **18** and sleeves **19**.

The device may be provided with decorations or ornaments, such as the elements **209** and **128** and lights, such as the lights **105** and **104** may be mounted in different positions on the structure of the device.

The seats of the flying saucers are covered with seat cushions **130** that extend across the seat portions and upwardly to the upper edges of the back, as shown in FIGURE 5 and such cushions may be formed in one piece and may be made of padding, foam rubber, or the like with a relatively tough plastic covering.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangements of the parts without departing from the spirit of the invention.

What is claimed is:

1. In a flying saucer, amusement device, the combination which comprises a telescoping mast, a support for rotatably mounting the mast in a vertically disposed position, means for rotating the mast, arms pivotally mounted on the mast and extended radially therefrom, braces supporting extended ends of the arms from the upper end of the mast, rods depending from extended ends of the arms sleeves rotatably mounted on the rods, flying saucers integral with and extended from lower ends of the sleeves, hand wheels mounted on the rods and positioned to be gripped by occupants of the flying saucers for rotating the flying saucers about the rods, brakes for restricting rotation on the flying saucers eccentrically mounted on extended ends of the arms, hydraulic cylinders mounted on the mast, means for supplying fluid under pressure to the hydraulic cylinders, and means operatively connecting the hydraulic cylinders to the brake elements on extended ends of the arms.

2. In a flying saucer amusement ride, the combination which comprises a support mounted on a base, a telescoping mast rotatably mounted in the support and extended upwardly from the base thereof, a motor mounted on the base of the support and operatively connected to the mast for rotating the mast, arms pivotally mounted on the mast and positioned to extend radially therefrom, rods depending from extended ends of the arms, sleeves positioned on the rods, discs on upper ends of the sleeves, flying saucers rotatably mounted on the rods and connected to the sleeves, hand wheels on the sleeves positioned to be gripped by occupants of the flying saucers for manually rotating the flying saucers, eccentrically mounted cams positioned on extended ends of the arms and mounted to frictionally engage the sleeves of the rods depending from ends of the arms for restricting rotation of said sleeves, rods pivotally mounted on the mast and having rollers thereon, said rods being operatively connected to the cams for actuating the cams, hydraulic cylinders mounted in the support, a ring carried by the hydraulic cylinders and positioned to contact rollers on said rods pivotally mounted on the mast whereby application of fluid under pressure to the cylinders elevates the ring for operating the cams, and supporting elements extended from ends of the arms to the upper portion of the mast.

3. In a flying saucer amusement ride, the combination which comprises a support mounted on a base, a telescoping mast rotatably mounted in the support and extended upwardly from the base thereof, a motor mounted on the base of the support and operatively connected to the mast for rotating the mast, arms pivotally mounted on the mast and positioned to extend radially therefrom, rods depending from extended ends of the arms, sleeves positioned on the rods, discs on upper ends of the sleeves, flying saucers rotatably mounted on the rods and connected to the sleeves, hand wheels on the sleeves positioned to be gripped by occupants of the flying saucers for manually rotating the flying saucers, eccentrically mounted cams positioned on extended ends of the arms and mounted to frictionally engage the sleeves of the rods depending from ends of the arms for restricting rotation of said sleeves, rods pivotally mounted on the mast and having rollers thereon, said rods being operatively connected to the cams for actuating the cams, hydraulic cylinders mounted in the support, a ring carried by the hydraulic cylinders and positioned to contact rollers on said rods pivotally mounted on the mast whereby application of fluid under pressure to the cylinders elevates the ring for operating the cams, supporting elements extended from ends of the arms to the upper portion of the mast, and ornaments carried by extended ends of the arms and upper end of the mast.

4. In a flying saucer amusement ride, the combination which comprises a supporting frame including a base having upwardly disposed converging struts extended therefrom and a bearing in the upper ends of the struts, a mast rotatably mounted on the base of the frame and extended upwardly through the bearing carried by the upper ends of the struts, means mounted on the base for rotating the mast, radially disposed arms extended outwardly from the mast, rods depending from extended ends of the arms, circular carriers having annular seats therein mounted on lower ends of the rods, sleeves on lower ends of the rods and positioned in the carriers, protective sleeves positioned on the rods above the carriers, hand wheels on the lower ends of said protective sleeves, positioned to be gipped by occupants of the carriers for rotating the carriers, and supporting elements extended from outer ends of the arms to the upper end of the mast.

5. In a flying saucer amusement ride, the combination which comprises a supporting frame including a base having upwardly disposed converging struts extended therefrom and a bearing in the upper ends of the struts, a mast rotatably mounted on the base of the frame and extended upwardly through the bearing carried by the upper ends of the struts, means mounted on the base for rotating the mast, radially disposed arms extended outwardly from the mast, rods depending from extended ends of the arms, circular carriers having annular seats therein mounted on lower ends of the rods, sleeves on lower ends of the rods and positioned in the carriers, protective sleeves positioned on the rods above the carriers, hand wheels on the lower ends of said protective sleeves, positioned to be gripped by occupants of the carriers for rotating the carriers, supporting elements extended from outer ends of the arms to the upper end of the mast, and braking means for retarding rotation of the carriers.

6. In a flying saucer amusement ride, the combination which comprises a supporting frame including a base having upwardly disposed converging struts extended therefrom and a bearing in the upper ends of the struts, a mast rotatably mounted on the base of the frame and extended upwardly through the bearing carried by the upper ends of the struts, means mounted on the base for rotating the mast, radially disposed arms extended outwardly from the mast, rods depending from extended ends of the arms, circular carriers having annular seats therein mounted on lower ends of the rods, sleeves on

lower ends of the rods and positioned in the carriers, protective sleeves positioned on the rods above the carriers, hand wheels on the lower ends of said protective sleeves, positioned to be gripped by occupants of the carriers for rotating the carriers, hydraulic cylinders corresponding with the arms and positioned in the supporting frame, braking elements in extended ends of the arms and means operatively connecting the hydraulic cylinders to the braking elements for retarding rotation of the circular carriers.

References Cited in the file of this patent

UNITED STATES PATENTS

991,336	Mangels	May 2, 1911
2,152,679	Bisch	Apr. 4, 1939
2,384,346	Schnell	Sept. 4, 1945

FOREIGN PATENTS

409,905	Great Britain	May 10, 1934