

Jan. 29, 1957

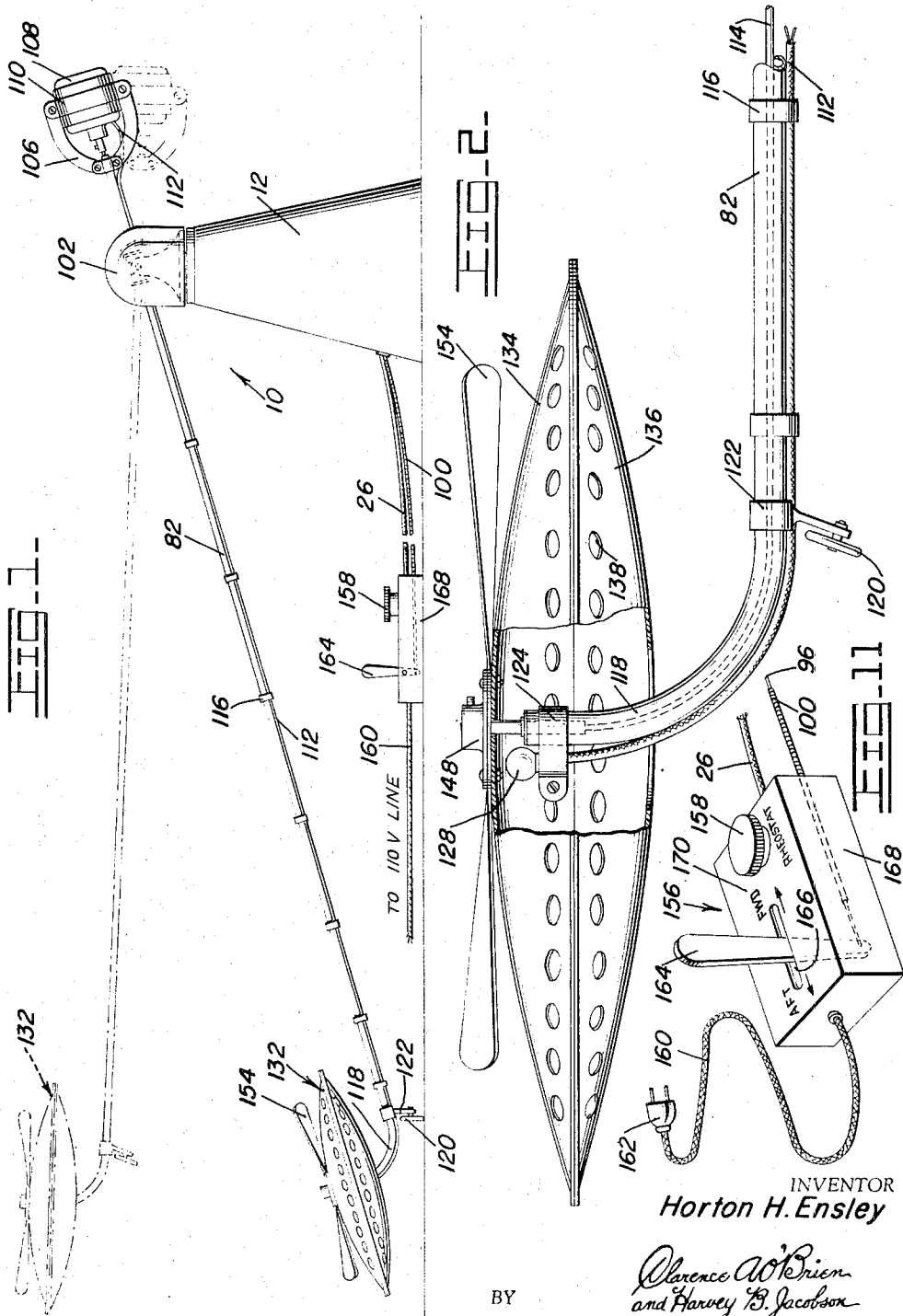
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2,779,595

AERIAL ROUNDABOUT TOY

Filed Nov. 8, 1954

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

FIG. 3.

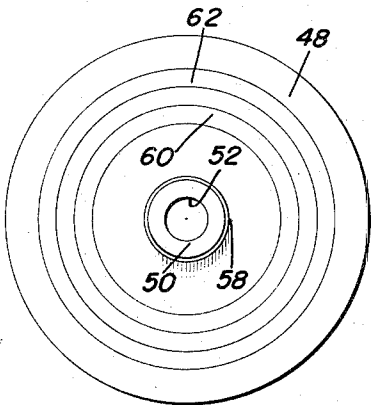
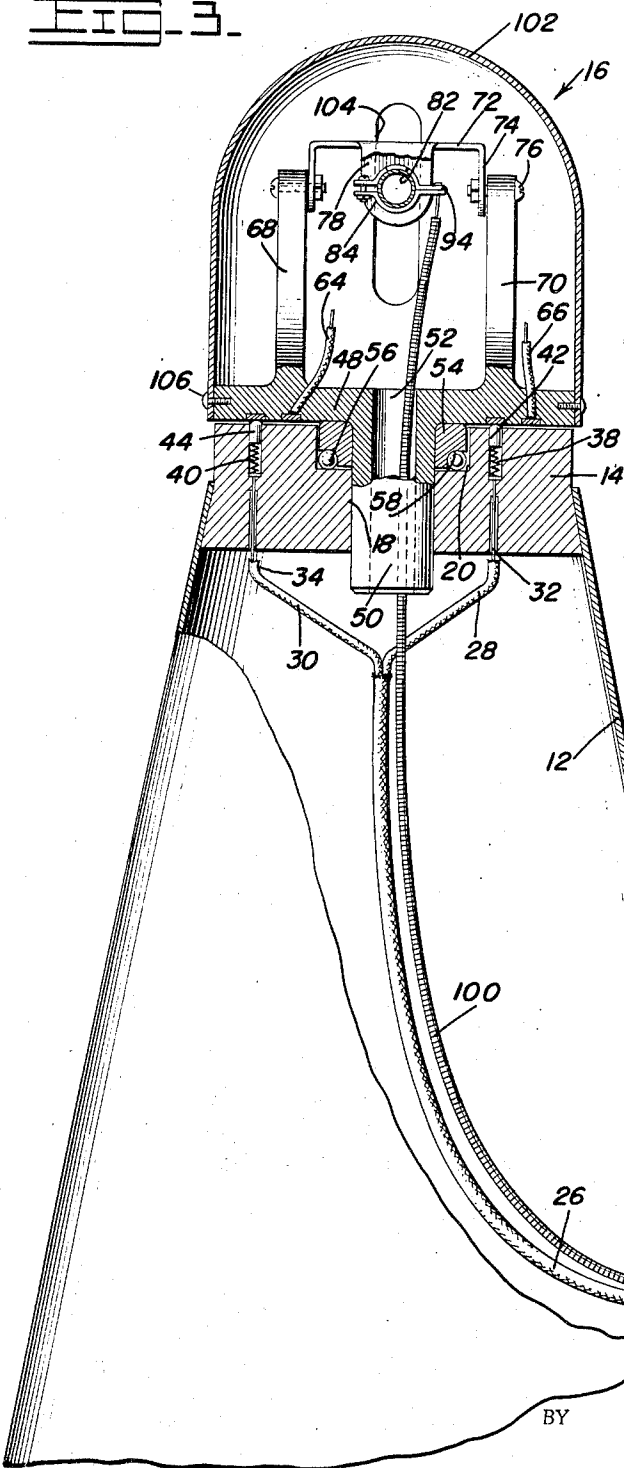


FIG. 7.

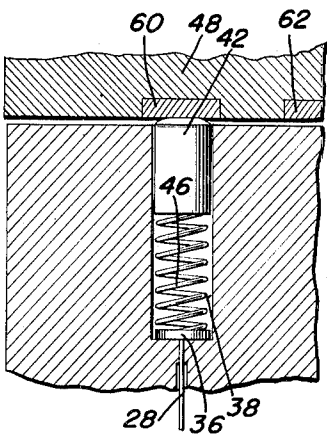


FIG. 8.

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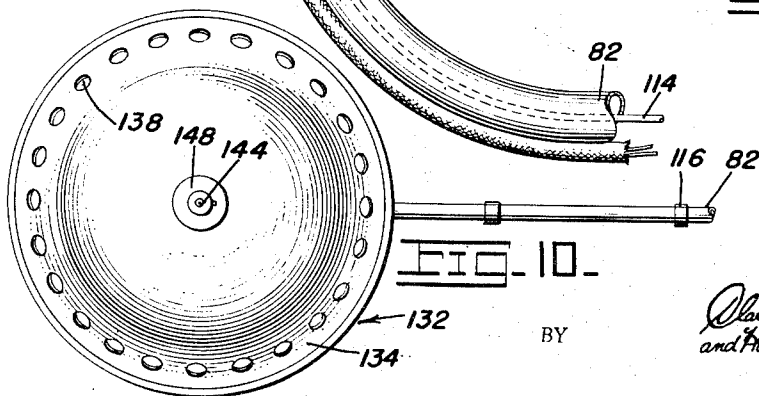
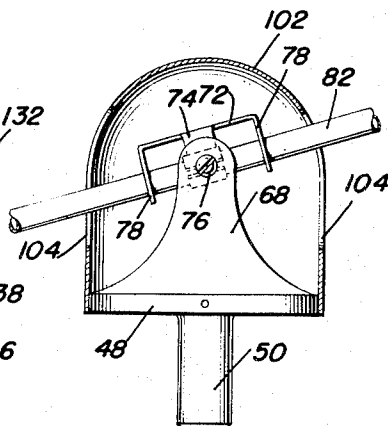
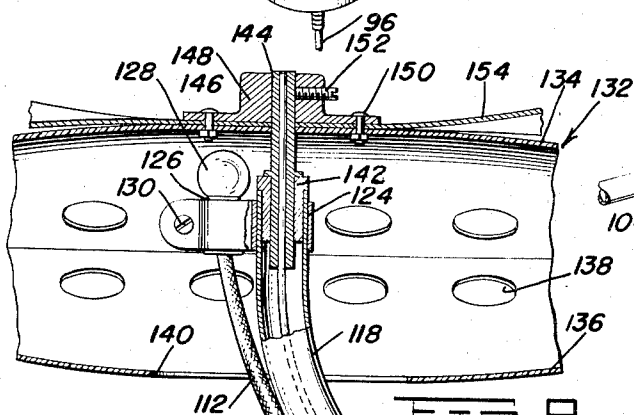
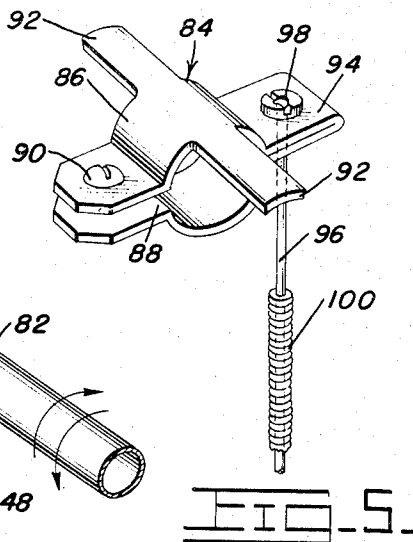
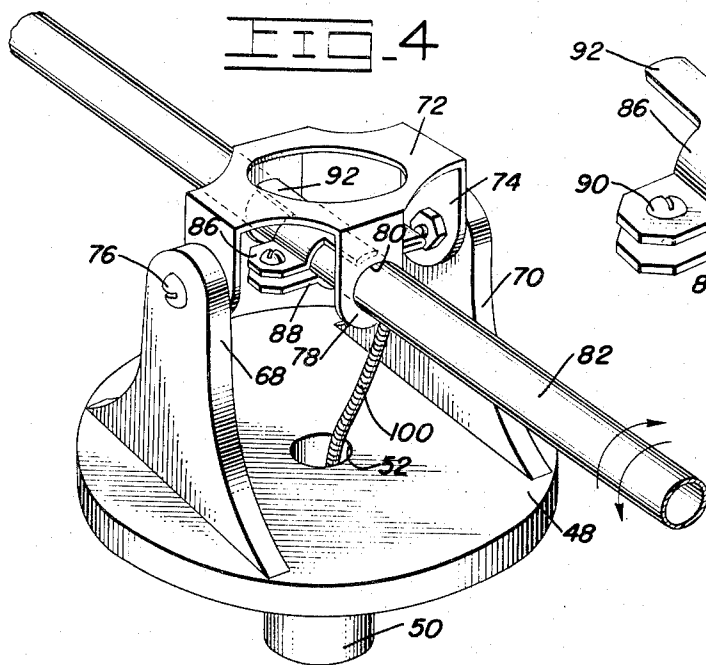
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3 Sheets-Sheet 3



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1

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AERIAL ROUNDABOUT TOY

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Application November 8, 1954, Serial No. 467,375

3 Claims. (Cl. 272-31)

This invention generally relates to a toy and involves improved and novel construction in a toy that will be highly entertaining and intriguing.

An object of this invention is to provide a toy including in its construction a rotating arm having a remotely controlled motivating device on the arm in the form of an airborne device such as a flying "saucer" or disk.

Another object of the present invention is to provide a toy including a rotating arm having a simulated airborne device on the free end thereof wherein a remote control device is provided for controlling the speed and direction of movement of the arm and the simulated airborne device on the end of the arm.

Yet another important object of the present invention is to provide a toy conformable to the preceding object and including illuminating means within the simulated airborne device thereby enhancing the novel effect and intrigue of the toy.

Yet another important object of the present invention is to provide a toy that is simple in construction, constructed by well known manufacturing procedures wherein the parts susceptible to wear may be easily replaced, rugged and dependable in construction, entertaining, safe, intriguing, remotely controlled, well adapted for its intended purposes and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view showing the toy of the present invention;

Figure 2 is an enlarged view with portions thereof broken away showing the construction of the outer end of the rotatable arm together with the simulated airborne vehicle thereon for motivating the arm;

Figure 3 is an enlarged sectional view showing the details of construction of the supporting base together with the rotatable mounting head positioned thereon and the means for controlling the toy of the present invention and providing electrical energy to the driving mechanism;

Figure 4 is a detailed perspective view showing the mounting means for the arm and the control means therefor;

Figure 5 is a perspective view showing the control clamp for attachment to the arm for pivoting the arm about its longitudinal axis;

Figure 6 is a side elevational view of the construction of Figure 4 with the protective cap positioned thereon and being broken away;

Figure 7 is a bottom plan view of the rotatable head on the supporting base and showing the position of the electrical contact rings;

Figure 8 is an enlarged detailed sectional view showing

2

one of the spring urged contact members in engagement with the contact ring;

Figure 9 is an enlarged fragmental sectional view showing the details of the airborne device mounting and the illuminating mounting means;

Figure 10 is a top plan view of the simulated airborne vehicle showing the construction thereof; and

Figure 11 is a perspective view showing the control mechanism for controlling the operation of the toy.

Referring now specifically to the drawings, it will be seen that the numeral 10 generally designates the toy of the present invention which includes a generally frustoconical supporting base 12 that is generally tubular in construction and includes a closure supporting plate 14 at the upper end thereof which forms a closure for the hollow supporting base 12 and also provides a support for a mounting head generally designated by the numeral 16. The supporting plate 14 is generally cylindrical and includes a bore 18 extending therethrough with the upper end of the bore 18 communicating with a counterbore 20. Adjacent the bottom of the supporting base 12 is an aperture 22 having an annular grommet 24 therein for receiving an electrical conductor 26 having two wires 28 and 30 positioned therein. At diametrically opposed points on the supporting plate 14 are provided vertical apertures 32 and 34 with the aperture 34 being positioned farther away from the center of the plate 14 than is the aperture 32. The apertures 32 and 34 receive the wires 28 and 30 respectively wherein the wires 28 and 30 are integrally formed with heads 36 on the ends thereof that are seated in sockets 38 and 40 respectively. Slidable in the sockets 38 and 40 are contact pins 42 and 44 respectively with each of the contact pins 42 and 44 being spring urged upwardly by a coil compression spring 46 which continuously urges the pins 42 and 44 outwardly toward the upper surface of the supporting plate 14.

Positioned on the supporting plate 14 for rotation about a vertical axis is the mounting head 16 which generally includes a circular plate 48 having a depending cylindrical boss 50 having an aperture 52 extending therethrough. The cylindrical boss 50 is rotatably received in the bore 18 in the plate 14 and a bearing race 54 surrounds the boss 50 and engages the undersurface of the plate 48 and bearing members 56 are disposed between the surface of the counterbore 20 in the plate 14 and the bearing race 54 thereby rotatably supporting the plate 48 on the supporting plate 14 for rotation about a vertical axis defined by the center of the aperture 52 extending through the boss 50. The bearings 56 are received in the groove 58 extending peripherally about the bearing race 54 thereby positioning the bearings 56 in correct position. Embedded in the undersurface of the plate 48 is a pair of concentric rings 60 and 62 which form a circle for continuous engagement with the contact pins 42 and 44 respectively thereby forming pickup rings for contacting the pins 42 and 44. Electrical wires 64 and 66 are connected to the pick-up rings 60 and 62 respectively for a purpose described hereinafter.

Integrally formed with the plate 40 and extending vertically upwardly therefrom is a pair of enlarged pivot brackets or lugs 68 and 70 for pivotally receiving a spider plate 72 having diametrically opposed depending legs 74 for engagement with the lugs 68 and 70 wherein the plate 72 is pivotally supported by fastening members 76. Diametrically opposed depending legs 78 depend from the plate 72 in right angular relation to the depending legs 74 and depending legs 78 are provided with circular apertures 80 for rotatably receiving an elongated tubular arm 82. A U-shaped clamp generally designated by the numeral 84 and including an upper leg 86 and a lower leg 80 is clamped to the tubular arm 82 by a fastening member 90. The upper leg 86 of the clamp 84 is provided with

projecting abutment members 92 on each end thereof wherein the U-shaped clamp 84 is positioned between the legs 78 depending from the plate 72 thereby limiting the longitudinal movement of the arm 82 but permitting rotational movement of the arm 82 in relation to the legs 78 and in relation to the plate 72. The bight portion 94 of the U-shaped clamp 84 projects laterally from the clamp 84 and from the tube 82 and a flexible cable 96 having an enlarged head 98 is positioned in an aperture in the lateral extension 94 and the cable 96 is encased in a coil wire housing 100 and extends downwardly through the boss 50 and out through the grommet 24 alongside the electrical conductor 26 for a purpose described hereinafter. This cable 96 and the casing 100 is that type normally referred to as a Bowden cable. Positioned over the plate 46 and forming an enclosure for the plate 72 as well as the U-shaped clamp 84 and the lugs 68 and 70 is a housing 102 having elongated arcuate slots 104 in each side thereof for permitting pivotal movement of the tubular arm 82 which projects from each side of the housing 102. The housing 102 is secured to the periphery of the plate 48 by screw fasteners 106 which retain the pivotal and rotational mechanism as well as the electrical contact in concealed relation but permits removal thereof for repair, replacement or inspection.

Referring now specifically to Figure 1, it will be seen that a generally U-shaped bracket designated by the numeral 106 is secured to the end of the tubular arm 82 for supporting an electric motor 108 by use of a supporting clamp 110. The electric motor 108 is supplied with electricity through an electrical conductor 112 that is connected to the electric wires 64 and 66. The electric motor 108 drives a flexible cable 114 positioned in the tubular arm 82 and which extends substantially the full length thereof. Also, the electrical conductor 112 extends alongside the tubular arm 82 and is connected thereto by clip members 116 for a purpose described hereinafter. Adjacent the outer end of the tubular arm 82 is an upwardly curved portion 118 and a supporting wheel 120 is secured to the tubular arm 82 adjacent the upwardly curved portion 118 by a mounting bracket 122.

Secured to the outer end of the tubular arm 82 is a double U-shaped clamp 124 for clamping a light socket 126 to hold a light bulb 128 by fastening means 130 thereby illuminating the motivating device generally designated by the numeral 132 and including a generally saucer or disk-like member having upper and lower hollow members 134 and 136 which are joined together along adjacent edges thereof and are provided with a plurality of spaced apertures 138 adjacent the periphery thereof wherein the rotation of the members 134 and 136 will give a novel effect from the light 128 passing through the apertures 138. In the bottom member 136 is an enlarged aperture 140 for permitting passage of the curved portion 118 of the tubular arm 82 and the electrical conductor 112 which supplies electrical energy to the light 126.

A bushing 142 is positioned in the end of the tubular arm 82 for supporting a bearing member 144 having a peripheral flange 146 thereon wherein the peripheral flange locates the bearing 144 in the bushing 142 thereby supporting a bearing cap 148 that is rigidly secured to the upper portion 144 of the disk-like member by fastening members 150 thereby supporting the disk-like member on the bushing 140. The bearing cap 148 is secured to the bearing 144 by a set screw 152 and a propeller 154 extends from the bearing cap 148 and is positioned between the bearing cap 148 and the upper surface of the upper member 134 which forms the disk-like member which generally simulates a "flying saucer." The flexible cable 114 forms a driving means for the motivating device 132 wherein the disk-like member including the upper member 134 and the lower member 136 together with the propeller 154 will be rotated wherein the propeller 154 will raise the upwardly curved end 118 of the tubular

arm 82 depending upon the speed of the propeller 154.

As illustrated in Figure 11 and generally designated by the numeral 156 is a control device including a rheostat 158 connected between the electrical conductor 26 and the electrical conductor 160 having a plug 162 thereon for insertion into a suitable electrical outlet (not shown). Also, a pivotal lever 164 is mounted in a slot 166 in a box-like member 168 wherein one end of the lever 164 is attached to the flexible control cable 96 and the other end projects above the box-like housing 168 for longitudinal movement of the control cable 96. The slot 166 is provided with indicia 170 adjacent each end thereof for indicating the action caused by movement of the control handle 164 wherein movement towards one end of the slot will cause the arm 82 to rotate in one direction and movement in the other direction by the handle 164 will cause rotation of the tubular arm 82 in the other direction.

In practical operation, the electrical plug 162 is connected to a source of electricity and the rheostat 158 actuated thereby passing electricity through the contact pins 42 and 44 wherein the contact rings 60 and 62 will pick up the electricity and carry it to the electric motor 108 thereby driving the flexible shaft 114 for rotating the propeller 154. By manipulation of the rheostat 158, the speed of the propeller 154 will be directly controlled. The electrical conductor 112 also supplies electrical energy to the light 128 positioned in the disk-like or saucer-like member on the end of the tubular arm 82. The speed of the propeller 154 will raise and lower the tubular arm 82 about the pivotal connection formed by the fastening member 76 thereby raising and lowering the saucer-like member. In order to rotate the arm 82 about the vertical axis formed by the boss 50, the control handle 164 is moved towards one end or the other of the slot 166. When it is moved to the position indicated as forward, the flexible control cable 96 will rotate the tubular arm 82 about its longitudinal axis in one direction thereby tilting the propeller 154 to rotate about an inclined axis wherein the propeller 154 will lift the arm 82 and also rotate it about the axis formed by the boss 50. When the control handle 164 is moved to the other position, the angular position of the propeller 154 is changed thereby changing the direction of rotation of the arm 82. It will be understood that the device may be constructed of readily obtainable material such as plastic where feasible thereby enhancing the economical feasibility as well as the manufacturing procedure in producing the toy of the present invention.

By loosening the fastening member 90 on the U-shaped clamp 84, the tubular arm 82 may be longitudinally adjusted for balancing the arm or positioning the arm in a desired position. Also, the enlarged head 98 may be removed from the cable 96 for permitting removal of the arm 82 and the mounting head 16 from the supporting base 12 for storage or shipment in a compact condition.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A toy comprising a base having a vertical bore, a mounting head provided with a hollow boss rotatably supported in the bore of said base, an elongated arm, means pivotally attaching said arm to said head, a motivating device at the end of said arm remote from said head, means for driving said motivating device, means for controlling said motivating device thereby controlling the movement of said arm and motivating device, said moti-

5

vating device including a rotatable propeller on said arm, a flexible drive shaft interconnecting said propeller and drive means, said control means varying the speed and angular position of said propeller, said motivating device including a hollow disc-shaped member having facing 5 concave upper and lower walls, a plurality of apertures in each of said walls, and illuminating means in said hollow member thereby shining through the apertures, said tubular arm being adjustable about its longitudinal axis and terminating in an upturned end portion for supporting the flexible drive shaft and propeller, said control means including means for adjusting the tubular arm about its longitudinal axis thereby adjusting the angular relation of the blade for determining the direction of rotation of the arm and the mounting head, the last-mentioned means consisting of a clamp on said arm, a laterally projecting portion extending from said clamp and generally radially of said arm, a push-pull device connected to said laterally projecting portion, said driving means including an electric motor positioned remotely 10 from said motivating means, complementary pickup rings and contact pins on said base and mounting head for supplying power to said motor, said control means including a rheostat for regulating the speed of the motor to thereby regulate the speed of the propeller.

2. In a toy of the type which includes an arm, a motivating means at one end of said arm, a motor to drive said means, and means drivingly connecting said motor and said motivating means, the improvement comprising 30

6

a base having a base plate in which there is a bore, a supporting plate having a hollow central lug, said lug being mounted for rotation in said bore, a bearing mounting said supporting plate slightly above said base plate, a pair of spaced brackets rising from the upper surface of said supporting plate and having aligned apertures, a spider plate, a pair of legs depending therefrom and having apertures, pivots in said apertures pivotally mounting said spider plate on said brackets, a pair of arm supporting legs extending from said spider plate and having aligned apertures whose axis of alignment is at right angles to said pivots, said arm being mounted for rotation in said aligned apertures, a clamp secured to the part of said arm between said arm supporting legs, a laterally projecting portion extending from said clamp generally radially of said arm, and a control cable to oscillate said arm extending through said hollow lug and secured to said laterally projecting portion.

3. The toy of claim 2 wherein said clamp has a pair of projecting abutment members extending in a direction parallel to the longitudinal axis and contacting said arm supporting legs to limit the longitudinal motion of said arm.

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