L. G. MODLIN.

ELECTRIC TOY AEROPLANE.

APPLICATION FILED DEC. 3, 1919.

1,364,203. Patented Jan. 4, 1921.

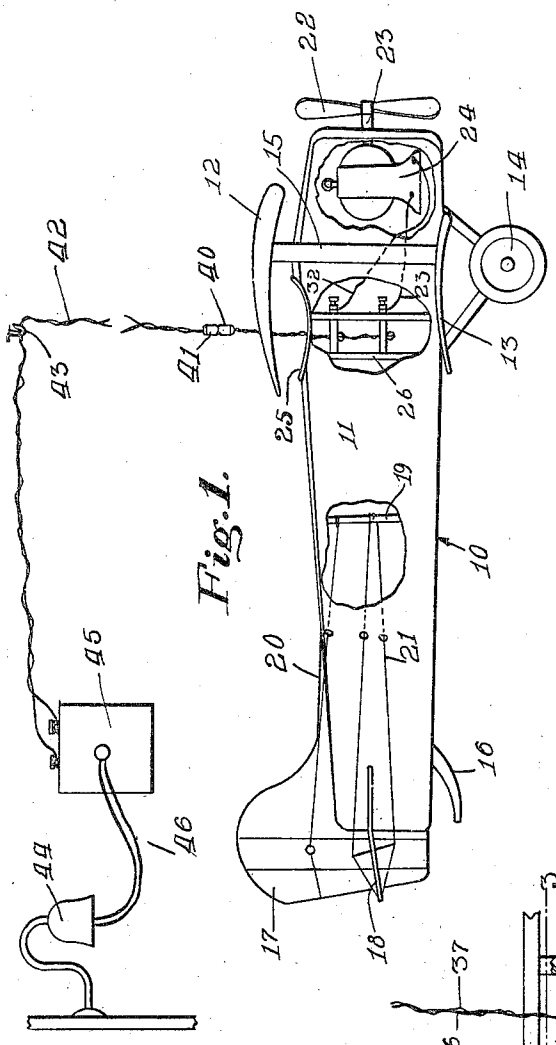


Fig. 1.

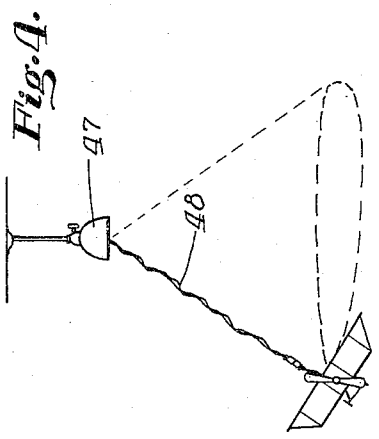


Fig. 4.

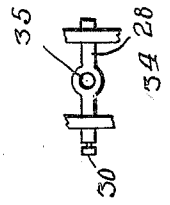


Fig. 3.

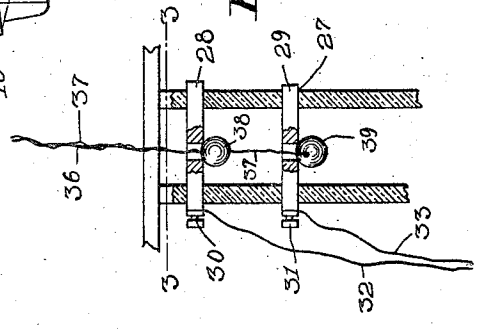


Fig. 2.

Witness

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UNITED STATES PATENT OFFICE.

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ELECTRICAL TOY AEROPLANE.

1,364,203. Specification of Letters Patent. Patented Jan. 4, 1921.

Application filed December 3, 1919. Serial No. 342,070.

To all whom it may concern:

Be it known that I, LOWELL G. MODLIN, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Electrical Toy Aeroplane, of which the following is a specification.

This invention relates to the class of games and toys and more particularly to improved electrical toy aeroplane including an electrically driven propeller adapted when the aeroplane is suspended and current is supplied to the motor, to be propelled and travel in a circular path and capable of control so as to regulate the ascending or descending movement thereof, as well as the degree of the arc of the circular path described by the machine when the same is propelled.

A further object of the invention is to provide a toy aeroplane of the class described, in which there is incorporated in the aeroplane, a swivel providing means for connection with a source of electrical current, such as suitable wires suspended from a ceiling or electric light socket and the operating motor of the propeller, affording the necessary connection for conducting current to the motor without permitting wires to twist during the travel of the machine when propelled in a circular path suspended as specified.

A further object of the invention is to arrange the device in a compact structure which obviates the necessity of providing separate supporting devices such as a mast, and which permits the aeroplane to be constructed along lines of modern types of aeroplanes, such as De Havilland and obviates complication and cumbersome supporting structure permitting the device to be constructed in a more simple and economical way.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 is a side elevation of my improved electrical toy aeroplane with the side of the fuselage or body broken away to show the interior connections;

Fig. 2 is an enlarged fragmentary sectional elevation of a swivel for supporting an electrical connection connecting the machine for operation;

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2 and looking in the direction indicated by the arrows; and

Fig. 4 is an elevation showing the device in operation and suspended from an electric light fixture carried by a ceiling.

Referring to the drawings in detail, in which like reference characters designate corresponding parts throughout the several views, the device is shown comprising a small toy aeroplane 10 of the De Haviland or other type, the same comprising a frame suitably covered with canvas or other cloth, said frame being preferably of wood and having a body or fuselage 11 arranged with the upper and lower planes 12 and 13, beneath the latter of which there is provided a landing gear 14, the planes being connected by suitable struts 15 well known in the construction of aeroplanes. At the tail end of the machine or body there is provided a tail skid 16, a hinged or pivoted rudder 17 and an elevating plane or aileron 18. Arranged vertically in the body or fuselage is a post 19 and the operating cords or cables 20 and 21 of the rudder and elevating plane, respectively, are drawn taut around the post 19, so that the frictional engagement therebetween will serve to hold either the rudder or the elevating plane at any desired adjusted position of angular movement, thus permitting the arc of the circle described by the aeroplane in flight, to be regulated, as well as the ascending or descending movement thereof.

Arranged at the forward end of the aeroplane is a propeller 22 having connection rigidly with the motor shaft 23, the motor being designated at 24 and being suitably rigidly supported within the body or fuselage, said motor being a small electric motor of any preferred type. Disposed forwardly of the cockpit 25, through which the cables are accessible, is a swivel comprising a pair of spaced parallel and vertically arranged supports 26 preferably of hard rubber or other suitable insulating material which are arranged to support in opposed

apertures 27 therein, contact plates 28 and 29, provided with binding terminals 30 and 31 at one end of each, for connection with the motor terminals through the medium of conductors 32 and 33.

The stationary contact members 28 and 29 are of current conducting material, preferably brass, and are intermediately provided with circular enlargements 34 apertured as shown at 35 so as to receive therethrough current conducting wires 36 and 37 preferably in the form of an insulated or rubber covered extension cord to one wire of which is connected a movable contact or terminal ball 38 and to the other of which is connected the similar contact or terminal ball 39 disposed below the contacts 28 and 29 respectively and insulated therefrom as by means of the coverings on the wires, so as to constitute swivels serving to support the aeroplane from the conductors with the parts 28 and 29 and 38 and 39 turning relatively, it being understood that the conductors 28 and 29 rest on the terminals 38 and 39 so as to move or rotate freely thereon, whereby the conductors will be prevented from twisting when the device is in use, while at the same time constituting an electrical connection between the conductors 32 and 36 and 33 and 37.

At the end of the short wire is a socket or plug connection 40 by means of which connection is made to a coacting coupling member 41 suspended at the lower end of a conductor wire 42 constituting a drop wire or electrical connection which may be suspended from a hook 43 at the ceiling of a room or the like, and connected to a lamp 44 at a side of a wall, with an interposed transformer 45, which may be substituted by a required number of dry cells to which the electrical connection is made by the wire 42, while a conductor 46 connects with the socket of the electric light.

Since the wires 36 and 37 of the conductor lead through the plane 12 and the cockpit 25 of the body, when the parts are connected so as to conduct the required current to the motor, the propeller will be driven so as to propel the machine in a circular path which may be regulated in the manner described. The balls 38 and 39 seat against the bottom faces of the conductors 28 and 29, so as to turn in the walls of the apertures therethrough, thus, permitting the aeroplane to swivel or turn without twisting the conductors as well as obviating the necessity of providing a supporting structure or mast together with the increased cost incident thereto.

In the form of the invention shown in Fig. 4 of the drawings, the device is shown suspended from a ceiling light 47, an ordinary extension 48 being employed and coupled to the short conductor wires leading from the contacts so that although the parts 38 and 39 move relatively to the contacts 28 and 29, a constant electrical connection will be effected to supply current to the motor. The extremities of the conductors 36 and 37 are preferably soldered or otherwise fastened through the ball terminals 38 and 39, the latter also being preferably of brass or the like so as to insure proper conduction. The device is very compact and can be readily connected in addition to obviating a special construction of aeroplane so that various types of standard aeroplanes can be imitated with the connections and extension means provided.

When the device is used in connection with an ordinary lighting circuit or on the ordinary central station current and a low voltage motor is used, a transformer 45 is employed so as to produce a current of low potential from a current of high potential in alternating current distribution systems, as is common in connection with toy devices of this class. In the form of the invention shown in Fig. 4 of the drawings, the motor of the device must of necessity be one that uses the same form of current that is supplied at the electric light fixture 47 and the transformer 45 shown in Fig. 1 of the drawings, is not required in this instance.

Having thus described the invention what I claim is:

1. An electrical toy aeroplane, comprising an aeroplane structure, an electric motor mounted therein, a propeller connected to said motor to be operated, and an electrical connection and suspending means for the aeroplane to operate the motor and including a swivel, said connection and swivel being mounted in the aeroplane, whereby one may turn relatively to the other without twisting the connection.

2. A toy comprising a body member, and suspending means therefor, said suspending means including a swivel mounted in said body member, said body having means of being propelled.

3. In a toy, a propelled vehicle, means for operating the same, a suspending means for the vehicle, and a swiveled connection in said suspending means and mounted in said vehicle, said connection including an apertured member through which said suspending member extends, and a ball terminal at the end of said suspending member engaging said apertured member.

4. In an electrical toy aeroplane comprising an aeroplane having a body, a motor mounted therein, a propeller carried by the motor shaft for propelling the machine, a swivel mounted in the body and including a pair of apertured contacts, terminals carried by said contacts, conductors between said terminals and the motor, movable ball contacts resting against the first mentioned contacts,

and having conductors leading therefrom through the apertures and insulated from said contacts provided with the apertures, and a coupling member at the free end of the conductor for connection with an extension wire from a light socket or source of current.

5. An electrical toy outfit, comprising an aeroplane having a rudder and an elevator, means for holding the same in adjusted position, an electrical motor in the aeroplane body having a propeller, conductors leading from said motor, suspension means for the aeroplane, said suspension means including current conducting wires and a swivel, said swivel comprising insulating plates, apertured supporting members of current conducting material carried thereby, said conductors of the suspending members leading through said apertures and electrically insulated therefrom, said supports constituting stationary contacts and movable contacts connected to said conductors after passing through the apertures and in the form of balls of current conducting material engaged against said supports at the apertures whereby the aeroplane and suspension members may have relative turning movement to avoid twisting of said suspension members.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LOWELL GIFFORD MODLIN.

Witnesses:

L. C. MAXEY,

OMER F. SAMUEL.