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TOY AEROPLANE ROUNDABOUT

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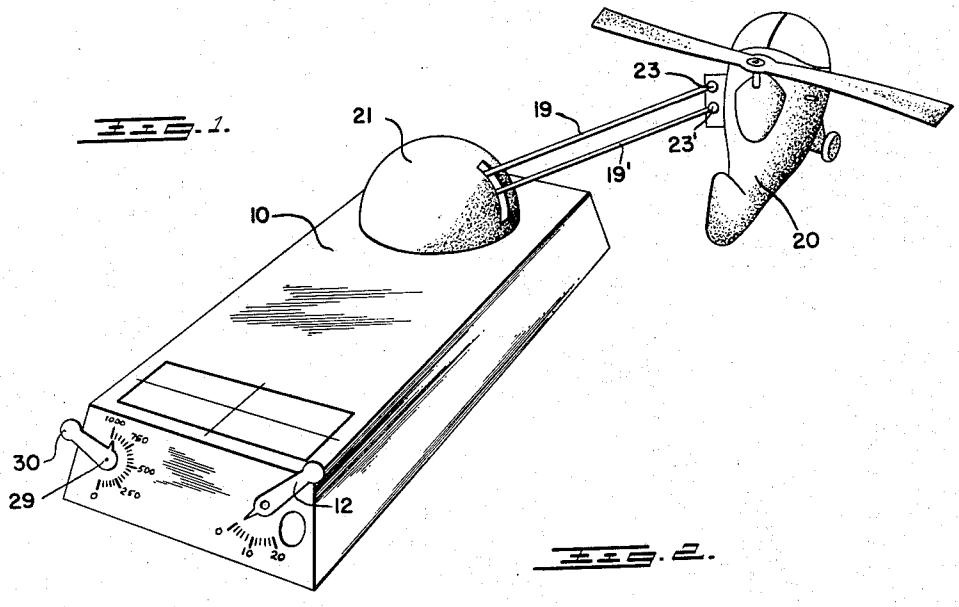
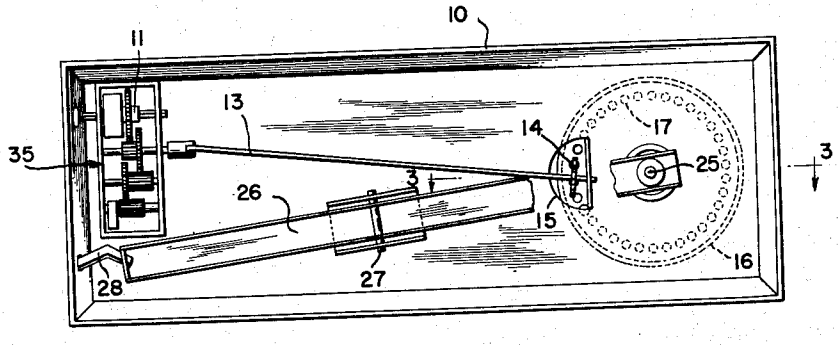


FIG. 1.

FIG. 2.



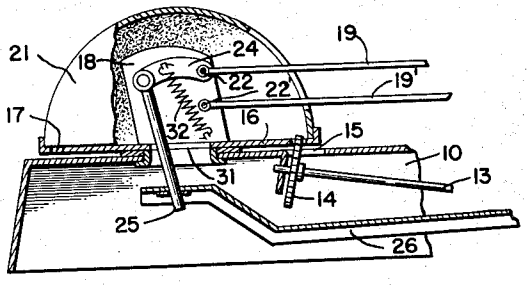


FIG. 3.

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TOY AEROPLANE ROUNDABOUT

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7 Claims. (Cl. 272—31)

The invention relates to an aeroplane toy with at least one aircraft flying around an axis of rotation. It is characterized in that the aeroplane during its flight changes its altitude, preferably by means of a carrier element extending radially to the axis of rotation and which is capable of swinging upwardly and downwardly.

Whereas in the known aeroplane toys the aeroplane always circles around its axis of rotation only, the invention brings the advantage that the child playing with the toy can determine the path of flight of the aeroplane as regards altitude. It can cause it to rise higher or to descend in a glide path. On account of this possibility of activity, the new toy aeroplane possesses an inducement to play. Furthermore, this object is attained in a progressive and constructionally simple manner.

The carrier element of the aeroplane consists, according to the invention, of two parallel rods, which at one end are pivotally attached to the aeroplane and at the other end pivot on a support member rotatable around the axis of rotation, preferably on a rotary disk or turntable driven at a distance from its center and having a central aperture for the passage therethrough of the actuating lever for effecting the upward and downward swinging movement of the carrier element. Consequently the carrier element can be actuated in any position of rotation to vary the altitude of the aeroplane.

According to another feature of the invention, the actuating lever consists of an arm capable of moving upwardly and downwardly. The free end of this arm cooperates with a rocking member, preferably similar to a balance beam. This rocking member and the shaft for driving the rotary disk are accommodated in a housing, which is relatively long compared with its width and forms the take-off and landing runway for the aeroplane. The housing has at one end above the rotary disk a cover in the form of a dome, tower or the like, and at its opposite end carries, for example on the end wall, the operating handles for the clockwork mechanism and for the rocking member.

Other features and advantages of the invention are hereinafter described with reference to the accompanying drawing, in which one form of construction is illustrated by way of example.

In the drawing—

Fig. 1 is a perspective view of the toy in accordance with the present invention.

Fig. 2 is a plan view of the housing with the bottom plate removed, and

Fig. 3 is a part longitudinal section taken on line 3—3 of Fig. 2.

Referring now more particularly to the drawing wherein like reference numerals are used throughout the various views to designate like parts, reference numeral **10** designates a housing which in the illustrated embodiment is of rectangular shape and relatively long as compared to the width thereof. A driving mechanism **11** of any conventional type is located within the housing **10** near

one end wall thereof. This driving mechanism **11** can be stopped and released by means of a swivel lever **12**. In addition thereto, various running speeds may be obtained by the use of a conventional change-speed gear generally designated in the drawing by reference numeral **35** which is driven by the drive mechanism **11**. The change-speed gear **35** includes a transmission output shaft **13** on which is fixedly mounted a toothed gear wheel **14** which projects through an opening **15** in the cover of the housing **10** and meshes with a series of apertures **17** provided in the rotary disk **16**. The apertures **17** are arranged along a circular path concentric to the axis of rotation of the rotary disk **16**.

The rotary disk **16** carries a vertical wall **18** forming a support member on which two parallel rods **19** and **19'** are pivotally mounted at one end thereof. The rods **19** and **19'** form a carrier element of the parallelogram type for the toy aeroplane **20** which is hinged to the outer ends of the rods **19** and **19'**. The rotary disk **16** and the parts mounted thereon are enclosed by a cover **21** which, in the illustrated embodiment, is in the form of a dome but might also represent a tower or the like.

The carrier rods **19** and **19'** are connected to the vertical wall **18** forming the support member at **22** and **22'** respectively at one end thereof and to the aeroplane **20** at **23** and **23'** respectively at the other end thereof. At least one of these rods **19** and **19'** has an extension **24** linked to an arm **25** which in turn is movable upwardly and downwardly. The arm **25** in turn is actuated by a rocking member **26** which is oscillatable or rockable about a transverse shaft or pin **27**. The rocking member or lever **26** is controlled by a crank-like element **28** provided at the end of a pivot pin **29** carrying an actuating handle **30**.

The arm **25** extends through a central aperture **31** in the rotary disk **16**. The arm **25** can be actuated irrespectively of the position of the disk **16** and also of the rocking movement of the carrier **19, 19'**. Consequently, the aeroplane **20** can be made to fly higher or lower during its circular flight, i. e., the angle formed by the carrier can be adjusted during rotation thereof.

A spring **32** is preferably provided to assist the upward movement of the arm **19** and to counteract the weight of the aeroplane **20**.

I claim:

1. An aeroplane toy comprising a toy aeroplane, carrier means for said top aeroplane, means drivingly connected with the inner end of said carrier means for selectively rotating said carrier means about a stationary axis to thereby rotate said aeroplane by rotation of said carrier means, said carrier means extending radially from said axis and being oscillatable in a vertical plane passing through said axis, means for pivotally securing said toy aeroplane to the outer end of said carrier means about a pivot axis extending at right angle to said vertical plane and parallel to the vertical central longitudinal plane of said aeroplane and with the longitudinal axis of said toy aeroplane substantially perpendicular to said plane, and means connected to said carrier means for selectively varying the angle of said carrier means relative to said axis and therewith the height of said toy aeroplane, whereby said toy aeroplane may rise and descend independently of the rotation thereof about said axis to simulate the take-off and landing of a helicopter type aeroplane, said connection between said carrier means and said last-mentioned means being such as to enable adjustment of said angle with respect to said axis while said carrier means rotates as well as while said carrier means is stationary.

2. An aeroplane toy as set forth in claim 1, wherein said carrier means includes two parallel rods pivotally connected to said toy aeroplane at the outer end thereof

and located one above the other in said first-mentioned vertical plane, and further comprising a support member on which the inner ends of said rods are pivotally mounted.

3. An aeroplane toy as set forth in claim 2, wherein said means for selectively rotating said carrier means includes a rotatable disk member carrying said support member, means for rotating said disk member at a point remote from said axis, said disk member being provided with a central aperture, and wherein said means for selectively varying the height includes an operating lever extending through said aperture to actuate said carrier means.

4. An aeroplane toy as set forth in claim 1, wherein said carrier means includes two parallel rods pivotally connected to said toy aeroplane at the outer ends thereof and located one above the other in said first-mentioned vertical plane, and wherein said means for selectively rotating said carrier means includes a rotatable disk element provided with a series of concentrically arranged apertures, a gear wheel operatively engaging the apertures of said rotatable disk element to thereby rotate said disk element by rotation of said gear wheel, a clockwork mechanism drivingly connected to said gear wheel, and a supporting member mounted on said disk element, said rods being pivotally connected with said support member along the inner ends thereof.

5. An aeroplane toy as set forth in claim 1, wherein said means for selectively varying the height includes an operating lever consisting of a vertically oscillatable arm, means for connecting one end of said vertically oscillatable arm to said carrier means, and a manually operable rocking member connected to the other end of said arm to determine the angle of said carrier means by movement of said rocking member in one or the other direction.

6. An aeroplane toy as set forth in claim 5, further comprising spring means operatively connected with the means connecting said operating lever with said carrier means and with a part of said means for selectively rotating said carrier means to counteract the weight of said aeroplane toy and thereby assist the upward movement thereof.

7. An aeroplane toy as set forth in claim 5, wherein said carrier means includes two parallel rods pivotally connected to said toy aeroplane at the outer end thereof and located one above the other in said first-mentioned vertical plane, and wherein said means for rotating said carrier means includes a rotatable disk element provided with apertures arranged concentrically with said axis, a supporting member carried by said disk element and pivotally connected to the inner ends of said rods, and means engaging said apertures for driving said disk element, and further comprising a rectangular housing of relatively greater length than width constituting the take-off and landing strip for said aeroplane, a cover for said rotatable disk element located along one end of said housing near the narrower side thereof, said driving means being located near the other end of said housing opposite said cover, and actuating handles at one end wall of said housing for controlling said driving means and the means for selectively varying the height.

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