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MEANS FOR SUPPORT AND OPERATION OF TOY AIRCRAFT

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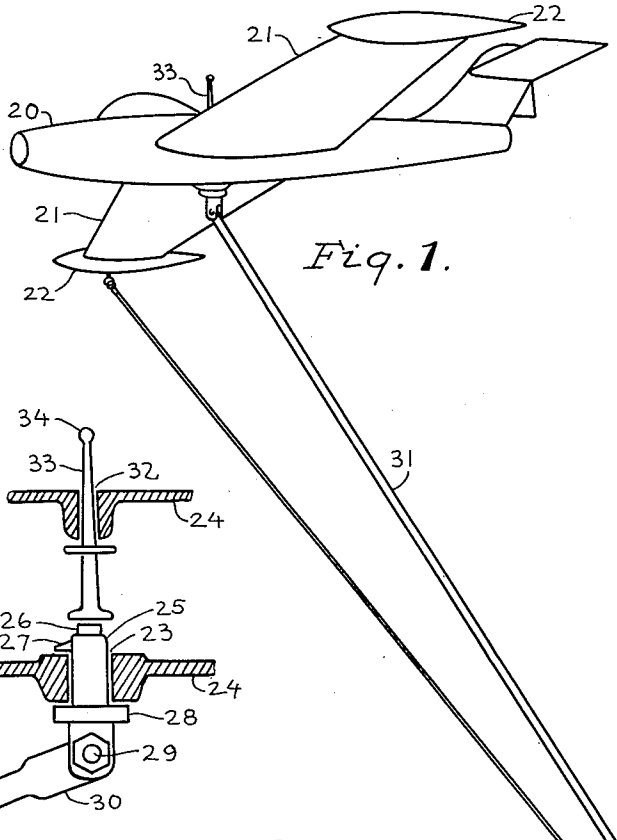


Fig. 1.

Fig. 2.

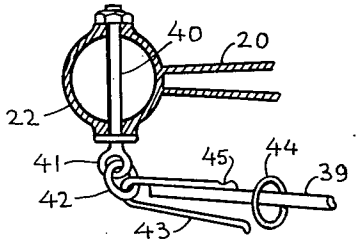


Fig. 4.

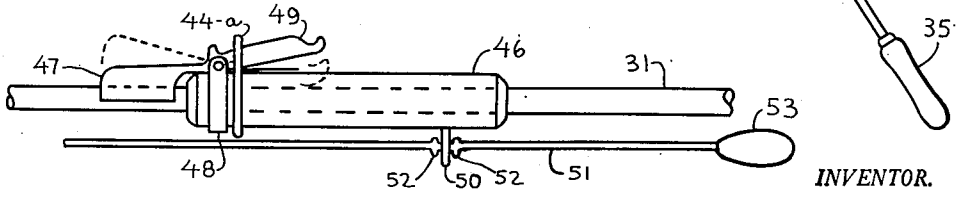
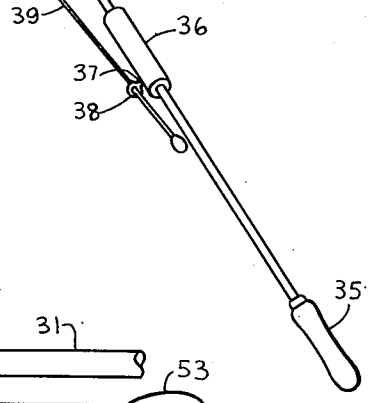


Fig. 3.



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MEANS FOR SUPPORT AND OPERATION OF TOY AIRCRAFT

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5 Claims. (Cl. 46—77)

My invention pertains to a toy air-craft in combination with a slender supporting rod or tube which by means operatively connected to the rod and to the craft permits execution of various air maneuvers to simulate flight.

I shall now describe my improvement with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a toy plane, the view including means to support the plane aloft and to control its position with respect to said supporting means;

Fig. 2 is a side elevational view of elements partly within the body of the plane and partly at the end of the plane-supporting means for disconnectable attachment of said means to the plane, parts of the plane being shown in section;

Fig. 3 is a side elevational view of a detail of construction of a modified control means, specifically, of a modified control rod and a locking means attached to the sleeve shown in Fig. 1;

Fig. 4 is a sectional view through one of the simulated fuel tanks at the end of one of the wings, the view disclosing means for connection of a control rod for control of the position of the plane relative to the means supporting the plane.

Similar numerals refer to similar parts throughout the several views.

As an example I am using an average toy plane, generally indicated by numeral **20**, which is preferably of hollow construction and includes two wings **21**, each terminating with a simulated fuel tank **22** of a conventional appearance. Located in an aperture **23** shown in Fig. 2 within the shell **24** of the body of the plane, on the underside thereof, is a cylindrical stud **25** containing an axially-disposed spring-actuated bolt **26** and a radially-projecting dog **27** retractable on pressure upon said bolt **26** from above. Numeral **28** indicates a flange upon said stud which at its lower end is bi-furcated and perforated transversely. This permits application of a bolt **29** for a pivotal connection to the properly adapted upper end **30** of a slender supporting rod or tube **31**.

In an aperture **32** within the shell **24** of the body of the plane, but within the top portion thereof, is a pin **33**, the lower part thereof resting on top of said bolt **26**. The upper end of the pin projects above said shell **24** and is formed into a knob **34** by means of which the pin may be depressed manually.

Slidingly seated upon the supporting rod **31** above the handle **35** at the lower end thereof, is a sleeve **36** which is adapted to be rotated about said rod. Radially set in the sleeve is a screw **37** terminating with an eye **38** which encircles control rod **39**, permitting its free rotatable movement but not a longitudinal movement therein, as explained hereinbelow with reference to the structure disclosed in Fig. 3. At the upper or opposite end said control rod **39** is connected to the underside of one of the simulated fuel tanks **22**. The connection is of the swivel type, as illustrated in Fig. 4, where a vertical bolt **40** diametrically passing through the midportion of the body **22** terminates at the lower end, outside of the wall

of the body **22**, with an eye **41**. The latter is connected by means of a ring **42** to a hairpin-shaped spring clip **43**, one leg of which is secured to the upper end of said control rod **39**. A removable ring **44** adapted to fit into a depression **45** in one arm of the clip **43** serves to bring the other arm of the clip **43** into abutment with said rod **39** to prevent disengagement of the clip **43** from said ring **42**.

The sleeve **46** shown in Fig. 3, which sleeve is analagous to **36** shown in Fig. 1, is provided with a spring-operated friction pad **47** pivotally mounted by means of a ring **48** upon said handle **46**, and controlled by means of a lever **49**. Ring **44***a* locks the pad in off position. As the structure is well known, no further description thereof is deemed necessary.

The eye screw **50** radially extending from handle **46** and rotatably connected to the control rod **51**, analogous to rod **39** in Figs. 1 and 4, is kept in place upon said rod by means of two ridges **52** straddling said eye screw **50**. Otherwise, said rod **51** is joined to one of the wing extremities in the same manner as said rod **39**. Numeral **53** indicates a handle for said rod **51**.

Referring now to the plane shown in Fig. 1, the operation thereof is quite obvious. To simulate the flight of a plane, the plane is held aloft upon the supporting rod **31**, the person operating the plane holding the rod by means of handle **35**. If it is desired to bank the plane, that is, to tip it laterally to one side or another, this is accomplished simply by sliding sleeve **36** upon said rod **31**. As the sleeve is connected to one of the wings by means of another rod, the control rod **39**, the movement of the sleeve downwardly will bring about a downward dip of that wing. By a reverse movement of the sleeve the wing will be tipped upwardly. If it is desired to impart to the plane a rotary movement substantially about a vertical axis, or more specifically, about the axis of the stud **25**, this may be accomplished by rotating the sleeve **36** about the rod **31**, while at the same time sliding it back or forth along the rod **31**, depending on the direction of the turn desired. The plane may be locked in any position by means shown in Fig. 3.

After a little practice a person may easily imitate take-offs, landing, banking, turning, climbing, diving, and all other types of acrobatics known to the art of flight.

The sleeve-locking device shown in Fig. 3 may be employed to keep the plane in a fixed position upon the rod, eliminating the possibility of lateral dips or a rotary action with respect to the above-named stud **25**, and also making it possible to hold the toy aloft with one hand in any pre-selected condition.

After having described my invention, what I wish to claim is as follows:

1. In combination, a toy or the like including a body, an elongated rod-like member having at one end a handle, a vertical coupling on the body of the toy or the like, said body being rotatable abut the axis of said coupling, the latter including at its lower exteriorly-protruding end a portion hingedly connected for movement about a horizontal axis to the other end of said elongated rod-like member, a control rod at one end slidably connected to the said rod-like member adjoining its handle for rotation about said rod-like member and for longitudinal movement thereon and pivotally connected at the other end to the peripheral section of the toy or the like, the control rod serving to tilt the toy when held by means of the elongated rod-like member.

2. In combination, a toy plane including a body and wings laterally extending therefrom, a supporting rod, the body being provided with means for connection to said supporting rod, the supporting rod being hinged at one end to a bolt for pivotal movement relative to the

bolt about an axis transverse thereto, the bolt being removably engaged with said means so that the body may pivot about the axis of the bolt, the supporting rod being adapted to be held manually at its opposite end, a control rod at one end rotatably and slidably connected to the supporting rod at a point remote from the body of the plane, the other end of the control rod being pivotally connected to the outer end portion of one of the wings, the plane being adapted, in response to the manual operation of the control rod, to be tipped about said axis transverse to the bolt and to be rotated about the axis of the bolt.

3. In combination, a toy or the like including a body, a supporting rod having at one end a handle, a vertical coupling within the body, the body being rotatable about the axis of the coupling, said coupling including a downwardly-protruding portion providing a hinged connection with one end of the supporting rod, a sleeve axially mounted on the supporting rod and adapted to move slidably therealong and to be rotated thereabout, and a control rod at one end pivotally connected to said sleeve and at the other end pivotally connected to the peripheral portion of the body of the toy, the control rod being adapted to be actuated manually by said sleeve to tilt the body about the axis of said hinged connection and to rotate the body about the vertical coupling.

4. In combination, a toy or the like as defined in claim 3 and including a locking means attached to the sleeve to keep said sleeve upon the rod-like member in a fixed, non-slidable, and non-rotating position.

5. In combination, a toy including a body and wings laterally extending therefrom, coupling means within the body for connection with a supporting rod, a supporting rod having at one end a bolt hinged thereto and vertically engaged with said coupling means, and a controlling rod at one end rotatably and slidably connected to the supporting rod at the end remote from the body of the toy, the other end of the control rod being pivotally connected to the outer end portion of one wing, the control rod serving as manual means to move the body about the hinge axis of said bolt and to rotate said body about the axis of said bolt.

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