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AERIAL TOY AND SUPPORT
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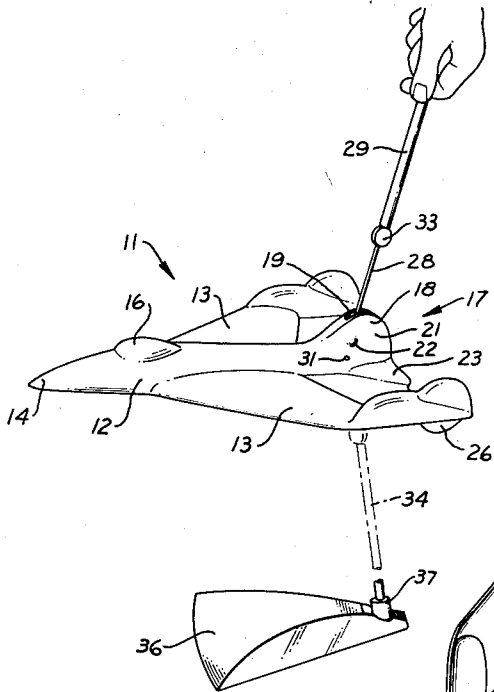


FIG. 1.

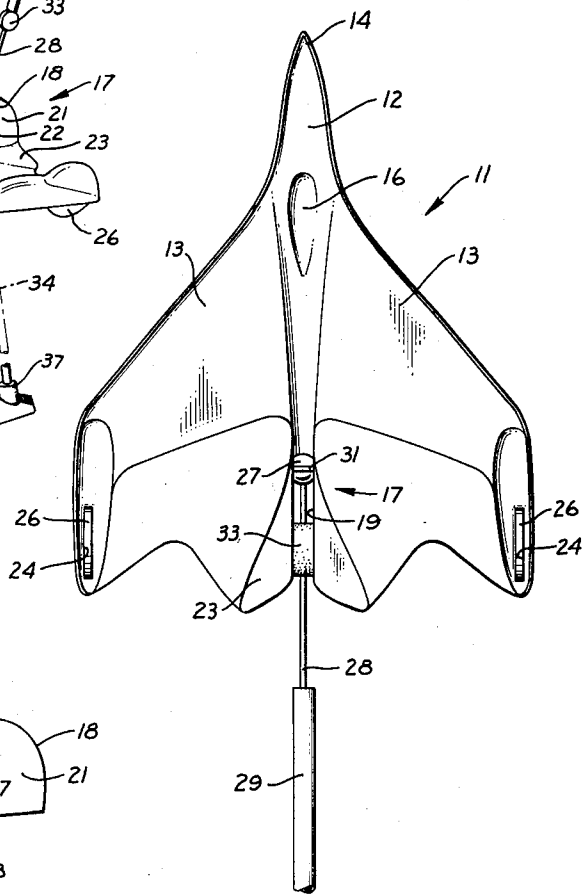


FIG. 2.

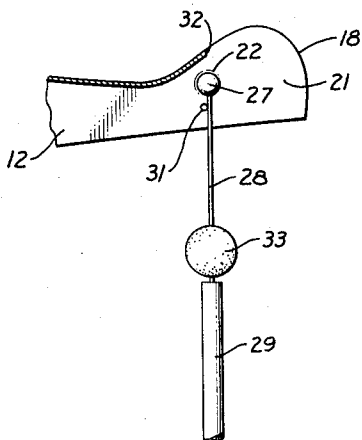


FIG. 3.

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AERIAL TOY AND SUPPORT

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7 Claims. (Cl. 46-32)

The present invention relates to improvements in an aerial toy and more particularly to an improved support therefor.

In my United States Patent No. 2,724,210, there is described and claimed a toy airplane or other bodies of similar shape adapted to float through the air in simulation of the flight of airplanes, birds, and the like. In the patented structure, support for the toy is achieved by use of a finger at the rear of the toy and a pin which slidably engages a slot in the finger. With this system, considerable control may be obtained depending upon the skill of the player, and the toy has been eminently satisfactory. The present invention provides additional features to the patented toy which provide increased areas of play.

Accordingly, the principal object of this invention is to provide a support for a toy of the character described whereby the latter may be floated through the air in a variety of flight angles and also given various types of rotational motion.

Another object of the invention is to provide an improved toy having a plurality of plays requiring practice and skill so that a player will derive many hours of enjoyment from the toy without tiring.

A further object of this invention is to provide an improved toy airplane that is influenced by the air as it is moved therethrough, and controlled by the player so as to provide an increased understanding of the principles of aeronautics.

These and other objects will be more apparent as the specification proceeds, wherein a toy is described which comprises an elongated body having a pair of wings projecting sideways therefrom, a socket at the rear end of the body having a pair of opposing spherically shaped surfaces, a ball co-operable with the socket, and a shaft attached to the ball.

Further objects and advantages of my invention will be apparent as the specification continues, and the new and useful features of my aerial toy will be fully defined in the claims hereto attached.

The preferred form of my invention is illustrated in the accompanying drawing, forming a part of this specification in which:

FIGURE 1 is a perspective view of a toy airplane embodying the principles of the present invention shown in flight;

FIGURE 2, a bottom view of the airplane in flight with the controls in an alternate position;

FIGURE 3, a fragmentary sectional view of the airplane in elevation illustrating the control system in greater detail.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the claims hereto attached, without departing from the spirit of the invention.

Referring to the drawing in detail, the toy 11 of my invention may be of any desired shape, preferably resembling a toy airplane or a bird or insect in flight, and comprising a body 12 and a pair of wings 13.

The body 12 is in the form of a curved sheet having a pointed forward end 14, a cockpit 16 and a tail section 17. Preferably, the entire toy with the exception of the support is shaped from a sheet of light-weight material such as plastic, treated paper or the like, and certain of the parts, as well as appropriate insignia, may be painted on, if desired.

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The tail section 17 comprises a rudder 18 which is in two substantially parallel sections that define a slot 19 therebetween. These two rudder sections also have walls 21 shaped to a spherical surface which define a socket 22 within the slot 19. If desired, rear wings 23 may be formed as raised portions in the sheet used to form the main body or in any other desired configuration.

The wings 13 extend rearwards beyond the body of the airplane with the weight being distributed to bring the center of gravity to a point on the axis of the body of the toy which is somewhat forward of the socket 22. Both wings are provided with slots 24 which are constructed to receive similar weights 26. I prefer to use coins such as nickels as weights, but it is within the ambit of this invention to use other coins or slugs. However, it is important to design the airplane so that the weights cause a shift in the center of gravity so as to coincide with socket 22. For this reason, a specific coin or slug is intended for a particular toy so as to provide the desired weight. It is also desirable to have the coin fit removably but snugly in slots 24. Preferably, the slots are formed from the same sheet as the rest of the airplane and have walls sufficiently resilient to receive and hold the coin. In addition to the function described above, the coins or slugs 26 project below the wings and simulate wheels.

The airplane is supported by means comprising a ball 27 co-operable with socket 22 and a rod or shaft 28 which is attached to the ball at one end and to a handle 29 at the other end.

The socket 22 is preferably formed in resilient walls of slot 19 so that the ball may be inserted or removed at will for either playing with the toy or putting it away. When the ball is inserted into the socket, it provides a universal type ball and socket joint allowing the airplane to pivot to at least some extent in any direction. However, since shaft 28 fits through slot 19, movement of the rod is restricted to an angle of deviation of say about 1 to 30 degrees from the vertical containing the axis of the body of the toy. In addition, stopping means are provided to prevent substantially forward positioning of the shaft and handle with respect to the socket. These means include pin 31 and wall 32 of slot 19.

The relative motion of the plane with respect to the handle may be temporarily restricted a further amount to provide a play variant explained in greater detail below, by means of a disc member 33 rotatably mounted on shaft 28 and axially slidable thereon for engagement into slot 19. When so engaged, motion of the airplane relative to the handle is restricted to rotation about the axis of shaft 28.

As indicated above, a principal feature of the toy of this invention is its unique balance and aerial movements which not only serve as a source of recreation but also serves to arouse the curiosity of a child player and his natural sense of inquisitiveness. There are four basic play features which will be described more fully below. In addition, combinations of these features as well as other play actions will occur to the player.

In one play form, the weights are put in place so as to provide the center of gravity at the ball and socket joint and the position shown in FIGURE 1 is assumed with the airplane on the floor or a table. The toy is then propelled forwards in level flight by the player who may move the handle behind or below the plane as shown by the handle position 34 shown in phantom in FIGURE 1. While thus flying airplane, the effect of air on the wings is observed and controlled by the player. Thus, the plane may be allowed to glide in the position shown in FIGURE 1 while the player follows the plane with the support.

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In another form of play, the player inserts disc member 33 in slot 19 as shown in FIGURE 2, and propels the plane forward in rapid flight. By holding the handle loosely, the effects of flight are observed and controlled by the player.

In a third form of play, the disc and handle are kept in the position shown in FIGURE 2, and one of the weights is removed. This shifts the center of gravity to an offset position outside the axis of the body and rotation of spinning may be effected about the axis of the handle and rod.

In a fourth form of play, both weights are removed and the disc and handle set as shown in FIGURE 3. In this set-up the center of gravity is on the axis of the body of the plane but off-set from the socket. Horizontal rotation may then be effected by the operator around the vertical axis of the shaft 28 to provide a pinwheel effect.

Another feature of the invention is the provision of a standard 36 so that the plane may also be displayed as an ornamental device when not being used for play. In this case, handle 29 may be positioned as shown in phantom at 34 and inserted into socket 37. The standard may be set on a table or fastened to a wall or the like to provide the desired display.

After attaining skill and practice, the player can carry out any desired movement such as dipping, rising, straight flying, swaying, turning, spinning, banking, upside-down flying, loop-the-loop, and any combination of these movements, much to his amusement and education in the general principles of aeronautics.

I claim:

1. In a toy of the character described, an elongated body having a pair of wings projecting sideways therefrom, a tail section extending rearwardly from the body, said tail section containing a rudder formed from two substantially parallel wall sections that define a slot therebetween, a socket in said rudder formed by a pair of opposed spherically shaped surfaces on the two parallel wall sections, said slot being entirely open at all angles rearwards of the socket whereby free access is provided over the entire rearward angle of 180 degrees axially of the body, a ball cooperably mounted in the socket, a shaft attached to the ball and fitting through the slot, and stopping means in the slot positioned in front of the center of the socket for restricting the shaft movement so as to prevent a forward position of the shaft with respect to the body.

2. The toy defined in claim 1 which also comprises a handle on the shaft and a standard having a socket for receiving the handle.

3. The toy defined in claim 1 in which the socket coincides with the center of gravity of the toy.

4. In a toy of the character described, an elongated body having a pair of wings projecting sideways therefrom, a socket at the rear end of the body having a pair of opposing spherically shaped surfaces, said socket having a slot extending rearwards of the socket whereby free access is provided over the entire rearward angle of

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180 degrees axially of the body, a ball cooperably mounted in the socket, a shaft attached to the ball and fitting through the slot, a handle on the shaft, and a disc member rotatably mounted on the shaft and engageable with the slot to restrict the motion of the body with respect to the shaft to rotation about the axis of the shaft.

5. In a toy of the character described, an elongated body having a pair of wings projecting sideways therefrom, a socket at the rear end of the body having a pair of opposing spherically shaped surfaces, said socket having a slot extending rearwards of the socket, the tips of the wings projecting rearwards beyond the rear end of the body and having slots adapted to receive weights whereby the center of gravity of the toy may be adjusted to provide various forms of play, a ball cooperably mounted in the socket, a shaft attached to the ball and fitting through the slot in the socket, a handle on the shaft, and a disc member rotatably mounted on the shaft and engageable with the slot to restrict the motion of the body with respect to the shaft to rotation about the axis of the shaft.

6. In a toy of the character described, an elongated body having a pair of wings projecting sideways therefrom, a socket at the rear end of the body having a pair of opposing spherically shaped surfaces, said socket having a slot extending rearwards of the socket, the tips of the wings projecting rearwards beyond the rear end of the body and having slots adapted to receive weights whereby the center of gravity of the toy may be adjusted so as to provide the center of gravity at the socket, a ball cooperably mounted in the socket, a shaft attached to the ball and fitting through the slot in the socket, a handle on the shaft, and a disc member rotatably mounted on the shaft and engageable with the slot to restrict the motion of the body with respect to the shaft to rotation about the axis of the shaft.

7. In a toy of the character described, an elongated body having a pair of wings projecting sideways therefrom, a socket at the rear end of the body having a pair of opposing spherically shaped surfaces, said socket having a slot extending rearwards of the socket, the tips of the wings projecting rearwards beyond the rear end of the body and having slots adapted to receive weights whereby the center of gravity of the toy may be adjusted so as to provide the center of gravity offset from the socket, a ball cooperably mounted in the socket, a shaft attached to the ball and fitting through the slot in the socket, a handle on the shaft, and a disc member rotatably mounted on the shaft and engageable with the slot to restrict the motion of the body with respect to the shaft to rotation about the axis of the shaft.

References Cited in the file of this patent

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