

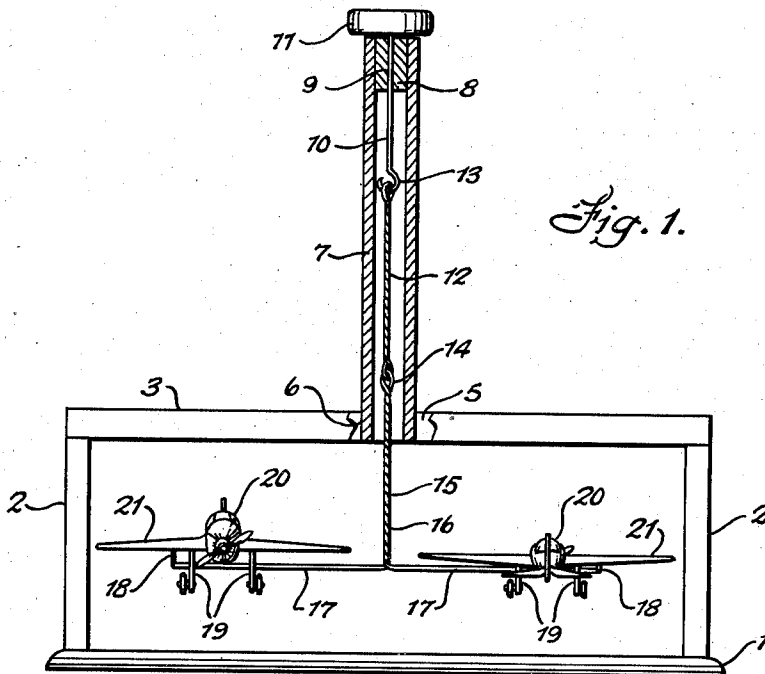
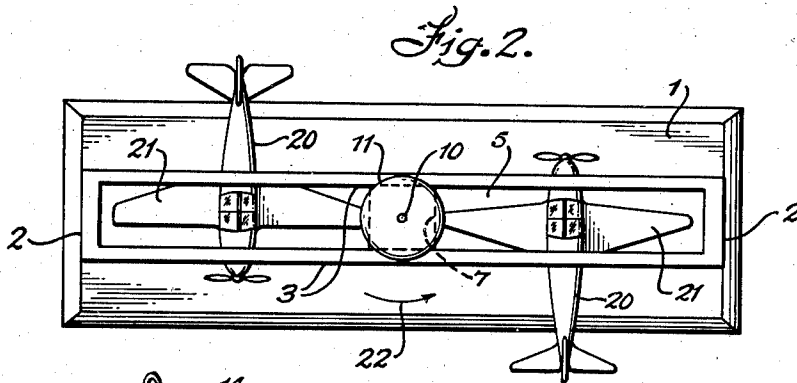
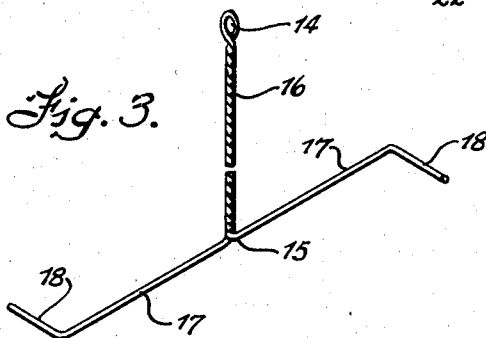
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J. MOELLER

2,474,750

AIRPLANE TOY

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AIRPLANE TOY

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1 Claim. (Cl. 272-31)

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This invention relates to novel improvements and useful refinements in aeroplane toys, and the principal object of the invention is to provide a device of the character herein described in which a pair of suspended aeroplanes are caused to revolve about a vertical axis by means of kinetic energy imparted to and stored in a length of twisted cord.

Another object of the invention is to provide a toy which will function for a considerable length of time without rewinding.

A further object of the invention is to provide a toy which does not employ springs, gears and other components of similar nature, such as may cause possible injury to youngsters playing therewith.

An additional object of the invention is to provide a toy which is of simple and of economical construction and which if damaged, can be easily repaired.

With the above more important objects in view, and such other objects as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the invention, partially broken away to reveal its construction.

Figure 2 is a top plan view thereof, and

Figure 3 is a perspective detail showing the carrier used in the invention.

Like characters of reference are used to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of an elongated base plate 1, provided at the ends thereof with a pair of upstanding wall portions 2, which in turn, are connected at their upper extremities by a brace 3.

The latter is provided with a longitudinally extending slot 5, in which is secured the lower end 6 of a hollow, vertically extending standard 7. This standard is of square cross sectional configuration and the center thereof is coincident with the center of the aforementioned base plate 1.

Positioned at the upper end of the standard 7 is a bearing block 8, provided with a central, vertically extending aperture 9. The latter is adapted to receive a rotatable winding shaft 10, the projecting, upper end of which is pressed into the winding disc 11. This disc is of substantial thickness to possess considerable weight, so that while it may be freely rotated by the

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operator's fingers, it will possess sufficient static inertia to remain at rest against the comparatively weaker influence imparted to it by the kinetic energy of a twisted cord 12, hereinafter more fully described.

The lower end of the shaft 10 is curved to form a hook 13, from which is suspended a length of cord 12, the latter in turn, passing through a loop 14 of a carrier 15. This carrier consists of a one-piece wire rod forming a vertical splice 16, separated at the lower end thereof into a pair of longitudinally aligned, outstretched arms 17, and terminating in the off-set end portions 18. Each of the arms 17 passes through the undercarriage 19 of a toy aeroplane 20, with the end portion 18 contacting the under-surface of the starboard wing 21 to hold the aeroplanes on a level keel.

Having thus described the construction of the invention, its method of operation will now be presented. The disc 11 is first given a few quick turns in the direction of the arrow 22, which action will twist the cord 12 as shown in the accompanying Figure 1. The twisting occurs because the initial resistance of the cord fibres is less than the static inertia of the carrier 15 and the associated aeroplanes 20.

After the rotation of the disc is discontinued, the latter will remain at rest as already explained in an earlier part of this specification, and the kinetic energy accumulated in the twisted cord 12 will expend itself in gradually overcoming the static inertia of the carrier 15. Resultingly, the latter will commence to rotate also in the direction of the arrow 22, about the vertical axis thereof at a continually accelerating rate of speed, until the cord 12 is fully unflexed. Thereupon, the carrier will continue its rotation under the continually diminishing influence of momentum, until it comes to a complete rest when that influence has been exhausted.

It will be noted that the rotation of the carrier 12 under its momentum as outlined in the immediately preceding paragraph, will be accompanied by twisting of the cord 12 past the fully unflexed position thereof. Consequently, after the carrier comes to rest, it will commence to rotate in the opposite direction under the influence of kinetic energy accumulated in the twisted cord, as has been already described. This motion will again produce a momentum which will rotate the carrier past the fully unflexed position of the cord, and it will be apparent that when once actuated by the initial few turns of the disc 11, the toy will continue to operate in the above outlined manner for a considerable

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period of time. However, during each successive cycle of rotation of the carrier 15, more and more potential energy will be expended in overcoming the friction in the cord 12 and the air resistance by the aeroplanes 20, until the carrier comes to a final rest.

It will be observed that while the toy constructed in accordance with this invention will provide amusement for young and old alike, it may be also effectively employed for instructional purposes in demonstrating the action of static and dynamic forces.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What I claim as my invention is:

An aeroplane toy comprising, in combination, an elongated base, an upstanding wall at each end portion of said base, a plurality of cross-members joining the upper ends of said walls, a vertical, hollow standard secured to said cross-members centrally above said base, a bearing block in the upper end of said standard, a vertical shaft journaled in said block and projecting above said standard, a winding disc secured to the upper end of said shaft, a hook formed at

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the lower end of said shaft, a length of endless cord in said standard, a carrier, said carrier being formed from one piece wire rod and comprising a vertical splice, a closed loop at the upper end thereof, a pair of horizontal arms outstretched in opposite directions from the lower end of said splice, and an angulated portion at the outer end of each of said arms, said cord passing around said hook and through said loop to suspend said carrier from said shaft, and a pair of toy aeroplanes, each of said arms passing through the undercarriage of one of said aeroplanes, said angulated portion bearing against the underside of the starboard wing thereof to retain the toy aeroplanes substantially horizontal, and said aeroplanes revolving about the vertical axis of said carrier upon manipulation of said disc.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
697,107	Slafter	Apr. 8, 1902
1,438,796	Tunley	Dec. 12, 1922
1,756,608	Reider	Apr. 29, 1930