June 4, 1946. E. B. CAVANAUGH 2,401,459

TOY AIRPLANE

Filed May 12, 1944

FIG. 2.

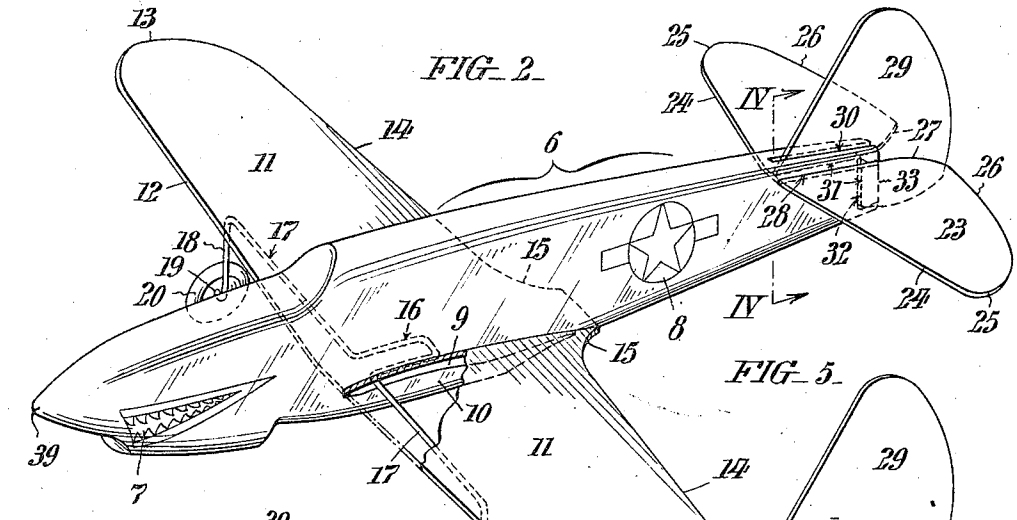



FIG. 5.




FIG. 1.

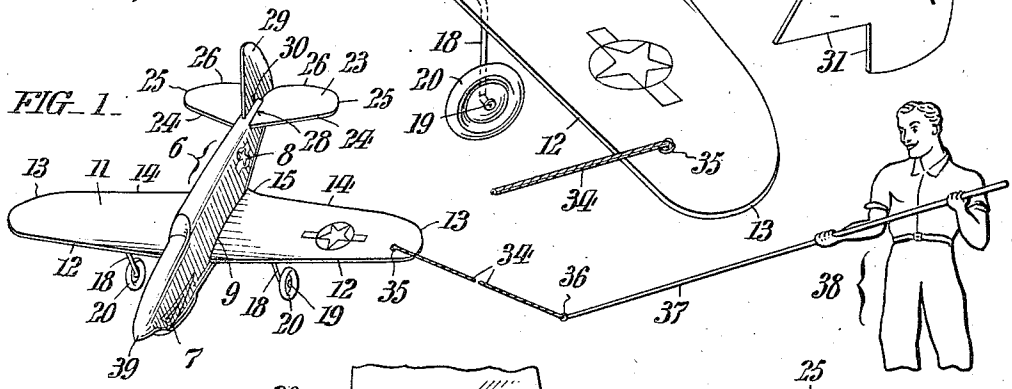



FIG. 3.

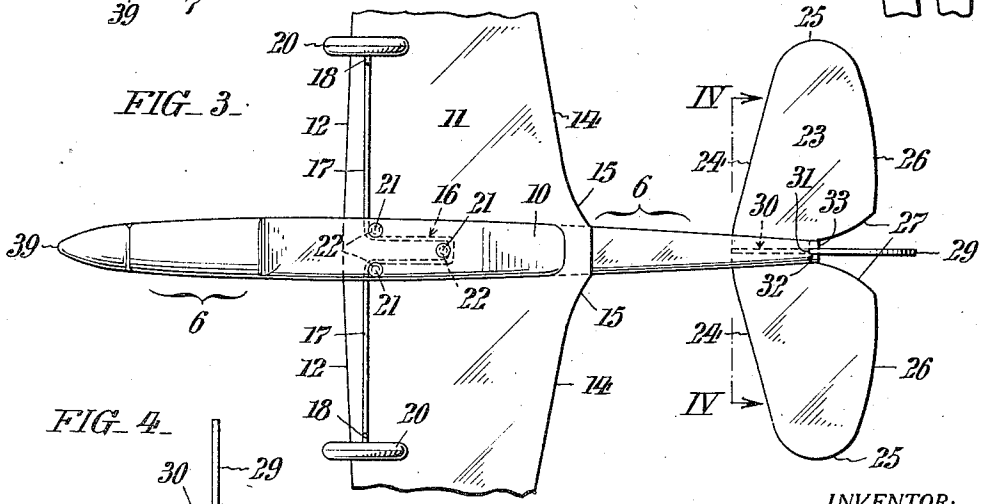
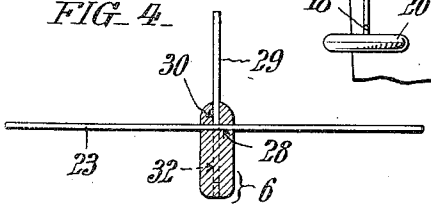



FIG. 4.




INVENTOR:
Edward B. Cavanaugh,
BY Paul & Paul
ATTORNEYS.

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## TOY AIRPLANE

Edward B. Cavanaugh, Philadelphia, Pa.

Application May 12, 1944, Serial No. 535,258

2 Claims. (Cl. 46—77)

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This invention relates to air-borne toys and, more particularly, to the species generally known as toy aero- or airplanes of the type adapted for flight and control by aid of a rod and line.

The primary object of the present invention is to provide an improved toy of the above indicated type, embodying structural refinements and features which conduce to better, and more accurate control of said toy during flight thereof.

Another object is the provision of a toy airplane which can be easily assembled, and adjusted for stabilization prior to use; while it is just as readily dis-assembled for storage.

A further object is to provide a toy airplane devoid of any propeller, and which can be freely manipulated for amusement purposes, with a closer approximation to actual flying behavior than previously attainable with similar toys.

A still further aim is to provide an improved toy airplane adapted to accomplish all of the foregoing objects, as well as others, in a manner which is simple and economical in construction, while being instructive and entertaining in use. Accordingly, while the instant disclosure exemplifies an embodiment of the invention, at present considered preferable, it is to be understood that changes and modifications are contemplated insofar as is permissible within the scope of the concluding claims.

In the sheet of drawings herewith:

Fig. 1 is a perspective view of a toy airplane embodying the present improvements, as well as the manner of bringing the plane down to a safe landing.

Fig. 2 is a larger scale perspective view of the improved toy airplane with parts broken away and in section for a clearer illustration of details.

Fig. 3 is an underside plan view of the toy airplane.

Fig. 4 is a cross-section taken approximately as indicated by the angled-arrows in Figs. 2 and 3; and,

Fig. 5 is a perspective view of the rudder.

In describing the embodiment of the invention illustrated, specific terms will be employed for the sake of clarity, but it is to be understood the scope of said invention is not thereby limited; and such term being intended to embrace all equivalents which perform the same function for an analogous purpose.

The improved toy airplane of this invention comprises a body-portion or unitary fuselage, comprehensively designated by the reference character 6, conveniently moulded or shaped to simulate a known type of fighter plane such as a

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"Mustang" and made of an appropriate composition, or a light-weight wood and preferably solid, while it is suitably marked at 7 and 8, for attractiveness. Longitudinally of the lower part of the fuselage there is formed a transverse cut-out or slot 9, having its rear end open, thereby defining a lengthwise tapering-section tong 10, for reception and grip restraint of the wing 11, preferably of thin sheet wood, said wing having a substantially-straight forward edge 12, rounded tips 13, and reversely-inclined rear edges 14 merging by arcs 15 to the sides of said fuselage as clearly shown, more particularly, in Fig. 2. From Figs. 2 and 3 it will be seen that the free end of the tong 10 impinges the underside of the wing 11 forwardly in respect to the rear edges 15 of the latter, and thereby aids to frictionally hold said wing in place. In addition the slot 9 affords retentive reception for the landing gear, conveniently made from piano wire to define a somewhat rectangular U-shaped medial section 16 for disposition between the bottom surface of the wing 11 and the upper face of the tong 10 and within the side confines of said tong; whereas said U-shaped portion serves to flex the wing 11 into frictional contact with the upper face of the slot 9. The legs 17 of the landing gear are, respectively, laterally extended and downwardly angled at 18, with their terminal portions outwardly turned to afford journals 19, for freely rotative wheels 20.

In order that the wing 11 and landing gear portion 16 may be anchored in place, brads 21 are inserted in holes 22, provided for the purpose, through the tong 10 and aligned holes in the bottom of the body portion 6, as readily understood by those conversant with the art; or, said holes may be provided in the tong 10, only, and the brads 21 driven through the wing 11 into the body portion 6, in an obvious manner (see Fig. 3).

The stabilizer 23 is, preferably, of the shape best shown in Fig. 3; that is to say, it is formed of thin sheet-material similar to that of the wing 11, with rearwardly tapered leading-edges 24, rounded tips 25, somewhat arcual rear edges 26, and a central cut-out 27. This stabilizer 23 is made a force-fit in a horizontal slit 28 provided for its reception in the tail portion of the fuselage 6; and care should be exercised in seeing that it be properly centralized when assembled in the plane.

The rudder 29 is also made of corresponding material to that of the wing 11 and stabilizer 23, while it is contoured more or less in conformity with known practice, and said rudder is made a

force-fit in a vertical slit 30 in the tail portion of the fuselage 6. Furthermore the rudder 29 is preferably cut-out at 31, Fig. 5, so that it may be also engaged in a vertical slit 32 in the rear end 33 of the fuselage 6, whereby it serves to lock the stabilizer 23 in position, against lateral displacement.

Having assembled the toy airplane it should then be tested for balance by placing the finger tips under the wing 11 about one-third of its width from the forward edges 12, and by raising the same slightly, if the toy "noses" down sharply, said wing should be moved forward until balance is noted; or, vice versa, if the toy "noses" up.

In order to fly the airplane one end of a line 34 is passed through an eyelet 35 suitably located near the rounded tip 13 of the starboard wing portion—for example—and knotted therebelow, said line having its other end attached to a swivel 36 at the extremity of a suitable pole, such as a conventional fishing-rod 37. Or, the swivel 36 may be attached to one end of a bamboo pole between six and eight feet long.

To operate the toy airplane, as described and shown, it is preferable to have someone launch said airplane by grasping one wing-tip 13 between the fingers, and when the operator 38 is ready to fly for the latter to give the signal for launching by swinging the plane in the direction the operator intends to circle the rod or pole 37. The operator 38 should then immediately swing the pole 37 just ahead of the plane and continue to turn until he feels the pull of the plane, and then after several turns raise the pole 37, and at the same time, increase the speed when said plane will "zoom" up. On lowering the pole 37 the plane will dive, while the line 34 should be kept taut, or the plane will pass out of control. To effect a landing the plane should be lowered to within about three feet from the ground and the speed of turning gradually decreased until the wheels 20 touch the surface of the ground, when it can be taxied gracefully to a stop. Spot landing, formation flying and speed-flying can be readily acquired with a little practice and skilful handling of the toy; while balloon "busting" can be easily acquired by simply attaching a pin to the nose 39 of the plane, in an obvious manner, anchoring a balloon or balloons at a height of about three feet above ground and nose-diving the plane down at it, or them.



From the foregoing, it is thought, the merits and attractiveness of the improved toy airplane will be fully appreciated without further elaboration herein; and that it fully justifies the objects stated in the prefatory paragraphs of this specification.

Having thus described my invention, I claim:

1. In a toy airplane, the combination of a unitary fuselage having in its lower part an open-ended tranverse cut-out defining a lengthwise tapering-section gripping tong; a sheet-material main wing engaged across said cut-out with its medial rear portion restrained against lateral movement by the free end of the gripping tong; a similar-material stabilizer with an associated rudder respectively held in a transverse slit in the upper region, and a vertical slit in the tail portion of the fuselage, and the rudder serving to lock the stabilizer in position; a wheeled landing-gear having a medial U-shaped portion in the transverse cut-out below the forward portion of the main wing, said shaped portion being effective to flex the wing into frictional contact with the confronting upper face of the cut-out aforesaid; means whereby the main wing and landing gear are jointly anchored against lateral displacement relative to the fuselage; and connectable means whereby flying of the toy airplane is controllable.

2. A toy airplane as defined in claim 1 wherein the wheeled landing-gear U-shaped portion is approximately rectangular; wherein the paralleling sides of said portion are opposingly extended and shaped to form dependent legs; and wherein the extremities of said legs are outwardly turned to provide aligned journals for the landing wheels.

EDWARD B. CAVANAUGH.