Sept. 25, 1934. H. E. NELSON 1,974,656

TOY AIRPLANE

Filed June 6, 1933

Fig. 1

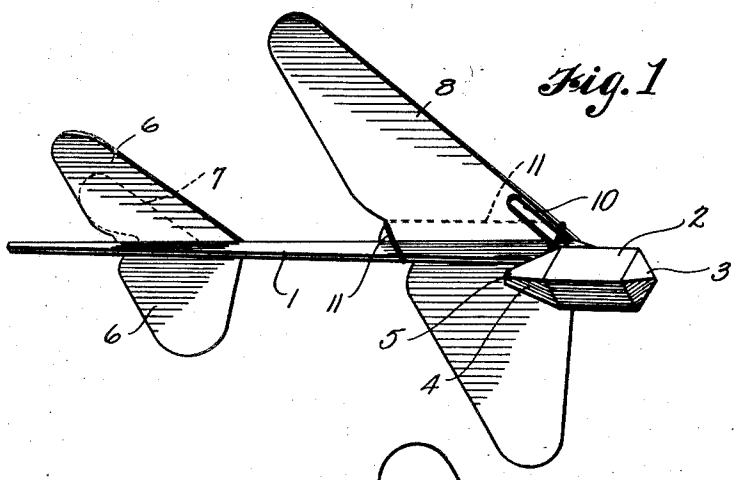


Fig. 2

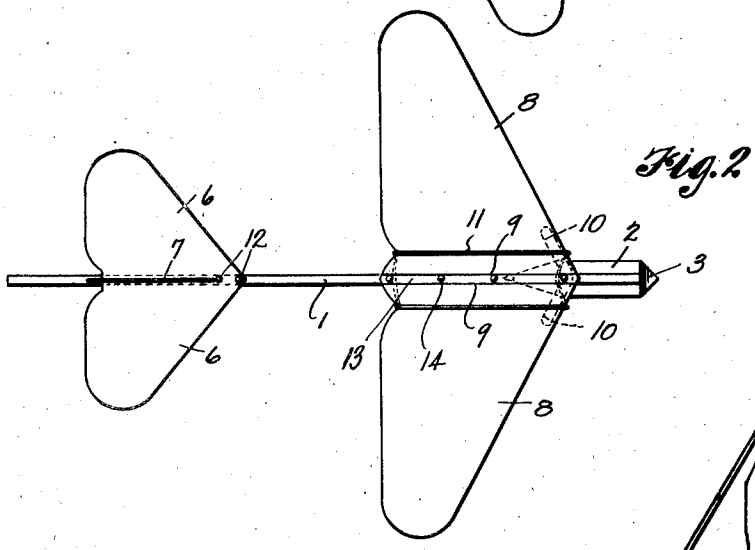


Fig. 3

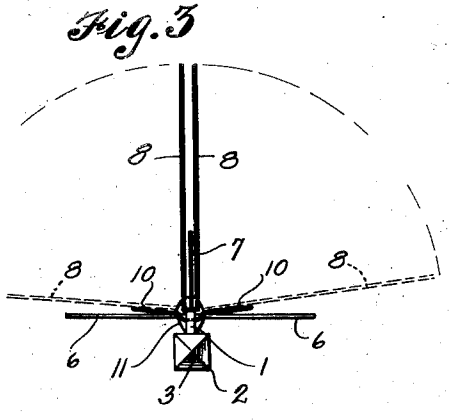
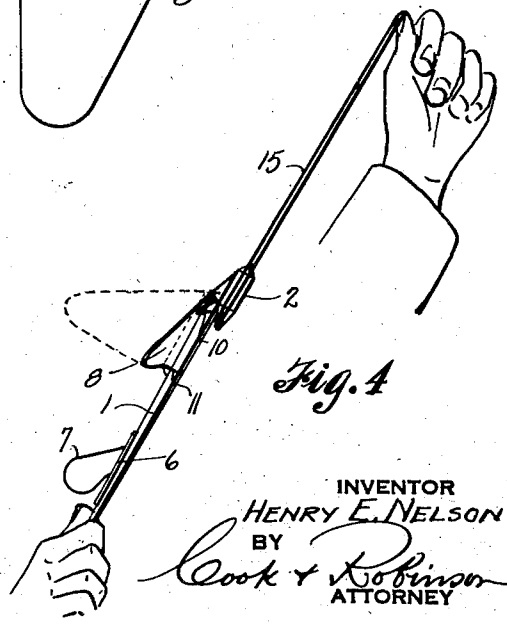


Fig. 4



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Patented Sept. 25, 1934 1,974,656

UNITED STATES PATENT OFFICE

1,974,656

TOY AIRPLANE

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Application June 6, 1933, Serial No. 674,475

4 Claims. (Cl. 46—50)

This invention relates to toy airplanes, and more particularly to an amusement device resembling an airplane which may be projected into the air to a considerable height by use of a rubber band, or the like, and will then glide back to earth in a slow and easy manner.

The principal object of this invention is to provide a device as stated above having its wings hingedly attached in such manner as to permit them to fold back together for projecting the device into the air, and will then automatically assume the extended position for gliding.

Other objects of the invention reside in the novel features of construction of the various parts and in their relationship and mode of operation, as will hereinafter be fully described.

In accomplishing these and other objects of the invention I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawing, wherein—

Fig. 1 is a perspective view of a toy airplane embodying the present invention.

Fig. 2 is a top or plan view of the same.

Fig. 3 is a front end view showing the wings folded upwardly and together as during the projection of the device into the air.

Fig. 4 is a perspective view illustrating the manner of projecting the device into the air.

Referring more in detail to the drawings—

The toy in its preferred form of construction comprises a longitudinal shaft which is attached at its forward end to a weighted elongated block 2; the block being substantially rectangular in cross section and tapered at its forward end to a rather blunt point 3, and likewise has its rearward end portion tapered as at 4, and provided at the end with a transverse notch 5 adapted to seat the rubber band used in projecting the device into the air. Fixed across the shaft 1 near its rearward end are lateral fins 6—6 of equal size and symmetrically located, and fixed on the shaft between the lateral fins in a vertical longitudinal plane is a rudder fin 7.

Fixed to the shaft near its forward end are wings 8—8. These are the same size and shape and symmetrically placed and are hingedly attached to the shaft as along lines 9—9 in Fig. 2, so that they may be folded upright, as from the dotted line position of Fig. 3 to the full line position. Supports 10—10 for these wings are fixed in the shaft to project laterally and slightly upwardly, as seen in Fig. 3, so that when the wings are in extended position they are supported slightly above the horizontal plane of the device.

A rubber band 11 is looped over the two wings and beneath the shaft, as seen in Fig. 2, and this operates to yieldingly retain the wings down against the supports. However, the strength of the rubber band is such that a slight wing pressure against the under sides of the wings will operate to fold them upwardly and together.

In the construction of this device, it is preferred that wood of a light character be used for the shaft and weighted body 2. The two fins 6—6 are formed in the same piece of material, such as waterproofed cardboard, or the like, and this is slotted lengthwise to receive the rudder 7 upwardly through the slot, and tacks 12 may be used to hold the parts securely in place on the shaft. The two wings 8—8 likewise are made from a single strip of cardboard and are integral with the central section 13 that is secured by tacks 14 to the shaft, and the hinge lines 9—9 are made by simply scoring the cardboard to permit of the upward and downward folding action of the wings.

In using the device, it is projected into the air by looping the rubber band 15, as is illustrated in Fig. 4, in the notch 5 of the part 2, then, by holding the forward end of the band in one hand and then pulling rearwardly on the shaft by grasping its rearward end in the other hand, the rubber may be drawn taut and when the device is released it will project the device into the air a considerable distance. On projecting the device into the air the air pressure acting against the underside of the wings 8—8 will cause them to fold upwardly to the dotted line position of Fig. 4, thereby forming sort of a rudder in the plane of the rudder 7, permitting the device to be projected to a considerable height. Then, as the projecting force is used up, the wings assume their lateral positions under pull of the rubber band 11, and thus serving to support the device for gliding.

By slightly bending the rudder 7 one direction or the other, the toy will be caused to glide in a circle. Or by bending the fins in different ways the toy may be caused to do various stunts.

The feature of this invention resides in the hinged construction of the wings and in the use of the elastic member for drawing them to extended position after the force of the projection has been spent. Many experiments have proven the fact that without this manner of hinging the wings the airplane could be projected but a very short distance into the air.

Having thus described my invention, what I

claim as new therein and desire to secure by Letters Patent is—

1. In a device of the character described, a longitudinal shaft, and a pair of gliding wings attached to the shaft by a longitudinal hinge and adapted to extend to opposite sides of the shaft and to fold upwardly and together, supports for the wings when extended yieldable means for normally retaining the wings extended for gliding.

2. In a device of the character described, a longitudinal shaft, rudder fins at its rearward end, a pair of gliding wings attached to the shaft near its forward end by a hinge longitudinally of the shaft and means whereby the wings are normally retained extended for gliding but yieldable under influence of wind pressure against their under sides to permit the wings to fold upwardly together for projecting the device into the air and means of the shaft for supporting the wings against downward collapsing when extended.

3. A device of the character described comprising a longitudinal shaft having a weighted forward end horizontal and vertical, rudder fins attached to the shaft at its rearward end, a pair of laterally extended wings hingedly attached to the shaft near its forward end, supports fixed in the shaft for retaining the wings against downward collapsing and resilient means connected with the wings for normally retaining them on said supports for gliding and yieldable under pressure against the under sides of the wings to permit them to fold upwardly together.

4. A device of the character described comprising a longitudinal shaft, a weight to which the shaft is attached at its forward end, a vertical and lateral rudder, fins fixed to the shaft at its rearward end, a pair of laterally extending gliding wings hingedly attached to the shaft near its forward end, laterally extending supports for the wings fixed in the shaft on which the wings rest in gliding position, a resilient member acting against the wings to yieldingly retain them seated but yieldable under predetermined wind pressure against the under sides of the wings to permit them to fold upwardly together for projecting the device into the air, and a notch in the weight for receiving a projecting means.

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