Dec. 5, 1944. N. E. WALKER 2,364,498

WEIGHTED GLIDER

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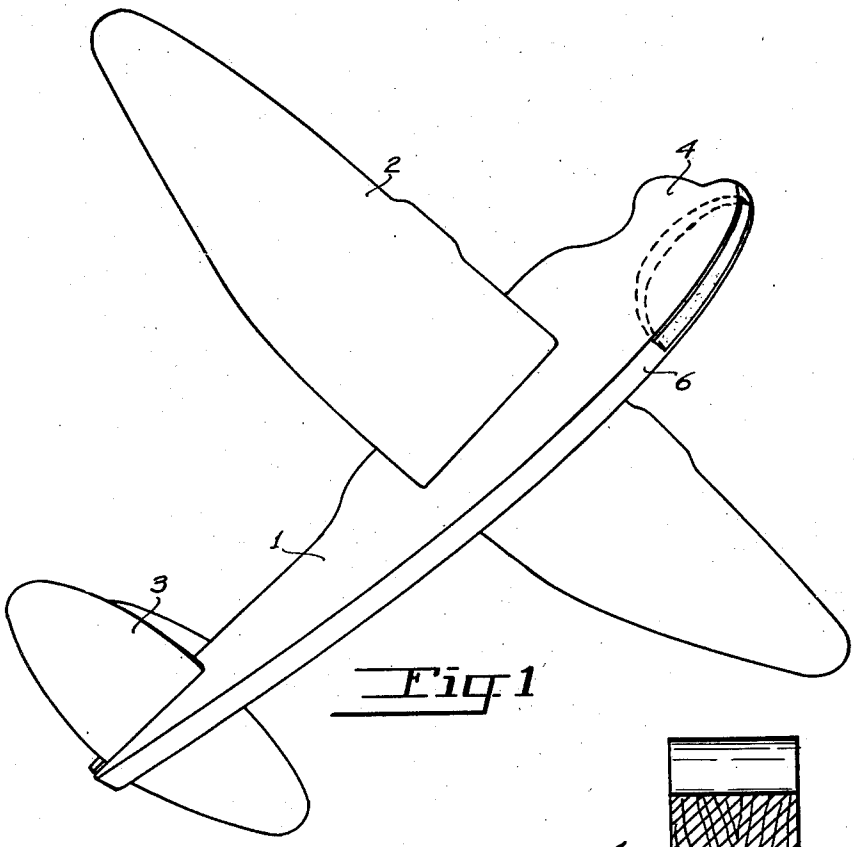


Fig. 1

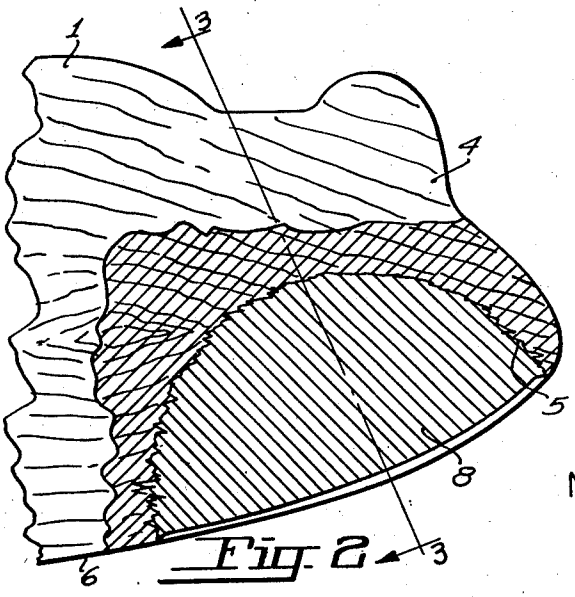


Fig. 2

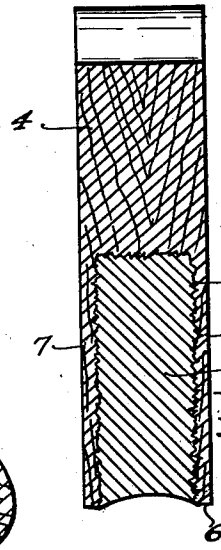


Fig. 3

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WEIGHTED GLIDER

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4 Claims. (Cl. 46—79)

My invention relates to toy gliders, and the like, which are commonly made of balsa wood and similar materials. Gliders are adapted to be thrown by hand or by a catapult and because of the lightness of said toys, it is common to provide a weight in the nose thereof so that they will be front-end heavy and will have sufficient mass to fly end-on, but will have sufficient air supporting surfaces to fly for substantial distances. It has been common to make said weights of lead or similar material having a high specific gravity. Said toys must be made quite inexpensively and it is essential that said weight be securely fixed in place. At the present time, lead and similar metals are deemed critical metals, and so are not available for use in toys and other products deemed non-essential for the prosecution of the war.

The principal object of my invention is to devise a toy of this character with a weighted head which can be completely and inexpensively formed, which will be lodged solidly in place and which can be made of non-critical materials.

This object of my invention is attained by making a toy plane with a flat, wooden body in which a cavity is formed open to one edge thereof. Said cavity preferably is elongated and lies inwardly of the two side faces of said body, and said cavity is filled with a comminuted material such, for example, as barium sulphate or other inexpensive material having high specific gravity. Said comminuted material is formed into a plastic with some wetting agent which also is an effective adhesive. An excellent material is sodium silicate solution, or one of the forms of wood-glueing agencies such as resins or animal glue. Said material serves to plastify the comminuted material and to bond it so that it sets as a solid. Said material also tends to permit the plastic to permeate the pores of the material forming said body so that said weight is not only adhesively secured to the sides of the walls, but is actually keyed in place and thus will not become inadvertently displaced.

Further and other details of my invention are hereinafter described with reference to the accompanying drawing, in which:

Fig. 1 is a perspective view of a glider made in accordance with my invention in which a semi-circular weight is placed in the nose of a glider open to one edge thereof and extending between the two opposed faces of the body portions thereof;

Fig. 2 is an enlarged elevation with the portions shown broken away diagrammatically to illustrate the manner in which the weighting material fills a cavity designed to retain said weight, and the binding material tends to impregnate the walls of the cavity to retain the weighting material's position; and

Fig. 3 is a transverse sectional view taken substantially on the line 3—3 in Fig. 2, illustrating the manner in which the weight is arranged with respect to the cross-section of the body portion of said glider.

A toy glider adapted for my invention is provided with a body 1, a wing 2, and a tail structure 3. The specific arrangement, shape and form of said structure is unimportant. Toy gliders of this character are most frequently made of balsa wood or similar light-weight material, because this material has good strong, structural properties and is of light weight, and thus, is adapted to form a glider which will soar substantial distances. It is common practice to make the body portion of a flat section of wood, and I preferably form a semi-circular recess in the nose 4 to accommodate the weight embodying my invention.

Said recess 5 opens to one edge 6 of said body. Said recess is elongated and preferably is narrower than the thickness of said body. That is, said recess lies inwardly of the two faces, 7, 7a, of said body. Said recess is intermediate said faces, leaving a substantially uniform section of wood at each side of said recess. Said recess is preferably formed by a routing blade or saw, and thus has roughened edges. Said recess is filled with weighting material 8 of the character described. Said material preferably is formed of a plastic having the consistency of putty. Said material is composed of comminuted material of substantial specific gravity which is wetted by a material which will also constitute an adhesive. Thus, when the said material is forced into the recess 5, it tends to fill in the pores and encrusts the roughened walls of the cavity, and thus keys the weight in place, as is diagrammatically illustrated in Figs. 2 and 3. The keying is somewhat exaggerated in said figures. If said material is permitted to solidify, which occurs in an hour or two, and then the wall of material adjacent the recess 5 is cut away, it will be discovered that the faces of the weighting material 8 will not be smooth and the fibres of the wood will be found embedded therein.

The material which I have found desirable for this use is barium sulphate, or so-called barites or heavy spar. Another material which is available and which serves as an excellent weight-

ing material, is titanium oxide or so-called rutile, brookite and anastase. These materials are comminuted and are mixed with a wetting and binding agent, such for example as sodium silicate solution, animal glue solution, or any of the resinous materials now used to bond plies of wood together such as the various plastic resins. Said plastic material is forced into the recess and subjected to some slight pressure, such for example as to digital pressure. Preferably, said weight is formed with the edge slightly concave as is shown most clearly in Fig. 3, so that there are no projecting edges present by which the material may be engaged and forced away from the wall of said recess. Said weighting material is about one-third to one-half the specific gravity of metallic lead and thus, the size of the weight is correspondingly larger than if a lead weight were used. Said weighting material, however, is superior to metallic lead in that it may be bonded more tightly to the body of a toy glider, it is less expensive, and is non-critical as far as current war needs are concerned. The coloration also may be selected to resemble wood or other material of which the body is made.

I claim:

1. A toy glider having a body, supporting surfaces, and a weight in the forward end of said body, said weight being seated in a recess opening to one surface of said body, said weight comprising a mass of comminuted barium compound and a binding and wetting agent, and said mass filling the recess formed in said body and being adhesively held in place by said binding and wetting agent.

2. A toy glider having a body, supporting surfaces, and a weight in the forward end of said body, said weight being seated in a recess opening to one surface of said body, and said weight comprising a mass of comminuted barium sulphate and a binding and wetting agent, said mass filling the recess formed in said body and being adhesively held in place by said binding and wetting agent.

3. A toy glider having a body, supporting surfaces, and a weight in the forward end of said body, said weight being seated in a recess opening to one surface of said body, said weight comprising a mass of comminuted material having high specific gravity, and sodium silicate solution, said mass filling the recess formed in said body.

4. A toy glider having a body, supporting surfaces, and a weight in the forward end of said body, said weight being seated in a recess opening to one surface of said body, said weight comprising a mass of comminuted barium sulphate and sodium silicate solution, said mass filling the recess formed in said body and being adhesively held in place by said binding and wetting agent.

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