Feb. 8, 1949. R. P. WILLS 2,460,959

AIRPLANE KITE

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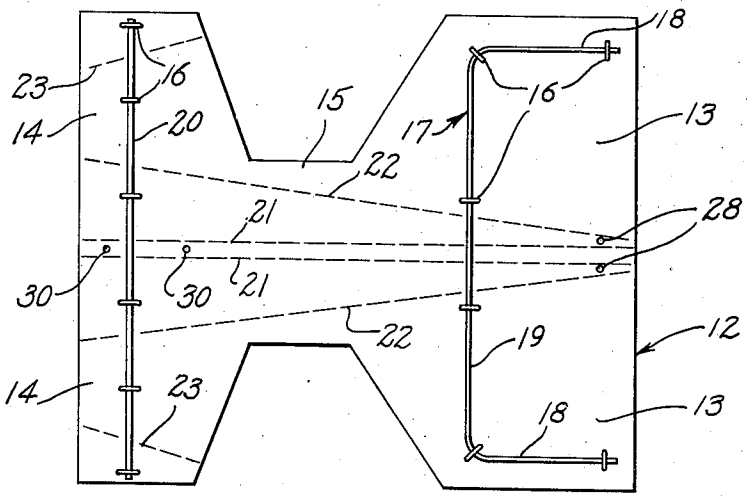


Fig. 1

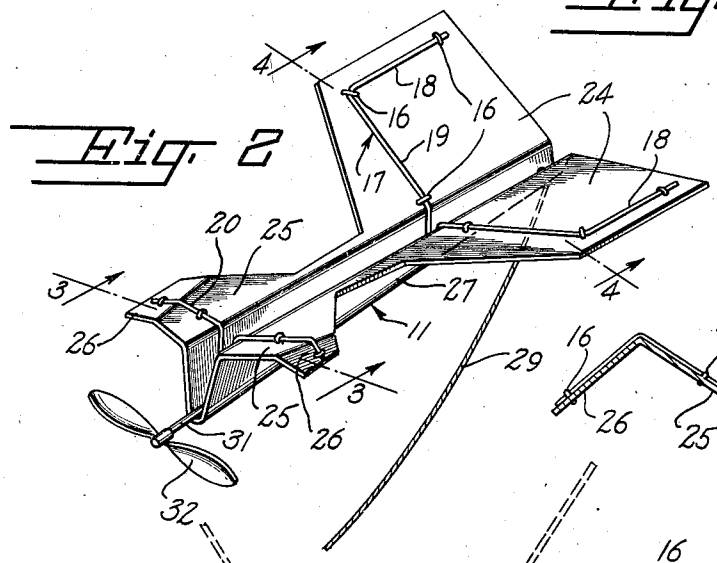


Fig. 2

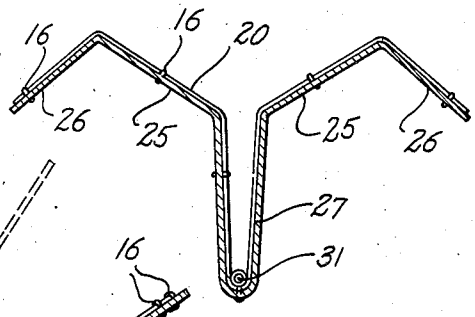


Fig. 3

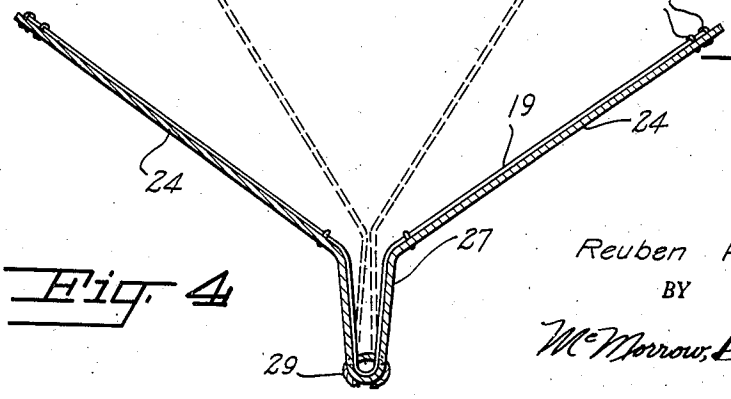


Fig. 4

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AIRPLANE KITE

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4 Claims. (Cl. 244—154)

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This invention relates to kites, and more particularly to kites of the airplane type, which do not require a tail.

A main object of the invention is to provide a novel and improved airplane kite without the customary long tail employed for balancing, the kite of the present invention being subject to a minimum amount of the sidewise and nose dipping common to kites of the prior art and which is self-adjusting to changes in velocity and direction of wind.

A further object of the invention is to provide an improved airplane kite which is very simple in construction, inexpensive to manufacture and very easy to assemble, the kite responding freely to changing wind currents without being subject to dipping or sidewise darting action, and having self-compensating action responsive to said changing currents to maintain the kite balanced.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a plan view of the body portion of an assembled kite unit according to the present invention prior to folding to operating shape.

Figure 2 is a perspective view of a completed kite employing the body member of Figure 1.

Figure 3 is an enlarged transverse vertical cross-sectional view taken on line 3—3 of Figure 2.

Figure 4 is an enlarged vertical transverse cross-sectional view taken on line 4—4 of Figure 2.

Referring to the drawings, 11 designates generally the main body portion of the kite said main body portion being formed from a blank of light tough sheet material such as ledger paper, Celluloid, or the like, shaped as shown at 12 in Figure 1. The blank 12 comprises front wings 13, 13 and rear wings 14, 14 and an intermediate narrow portion 15. Secured to the front wing portion of blank 12, as by strips of adhesive tape or the like, shown at 16, is a piece of light gauge steel wire 17, such as piano wire, bent to U-shape and positioned with its side arms 18, 18 extending forwardly adjacent the side edges of the front wings 13, 13 and its cross-arm 19 extending transversely of the longitudinal axis of the blank. Secured to the rear wing portion of the blank in the same manner is a transverse piece of similar light gauge wire 20.

The assembled blank shown in Figure 1 is folded on respective fold lines, designated at 21, 21, 22, 22 and 23, 23 to the shape shown in Figure

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3, defining front wings 24, 24 at an angle of about 120 degrees to each other, and rear wings 25, 25, at substantially a similar angle to each other. The rear wings 25, 25 have downwardly bent end tabs 26, 26. The blank is folded at its central portion to define a forwardly tapered fuselage 27 which is substantially V-shaped in transverse cross-section.

Designated at 28, 28 are openings formed in the blank by means of which a string 29 may be secured to the kite, said openings being located at the forward end of the fuselage 27. Designated at 30, 30 are additional openings, said openings being located on the longitudinal center line of the blank near the rear end thereof. Said openings 30, 30 are employed for securing a propeller rod, shown at 31, to the rear end of fuselage 27, said propeller rod having a toy propeller 32 rotatably mounted thereon. The propeller rod 31 and propeller 32 do not contribute to the operation of the kite but merely increase its resemblance to an actual airplane.

The front wings 24, 24 are yieldably braced by the wire 17, the forwardly extending side arms 18, 18 of said wire having resilient cantilever action with respect to the transverse portion of said wire. During flight, when a strong gust of wind strikes the front wings 24, 24, the forward end portions of the wing tips will close inwardly toward each other, such inward movement being allowed by the yielding of side arms 18, 18. The inward deflection of the forward end portions of the wing tips produces a generally conical configuration at the front end of the kite which prevents sidewise dipping and reduces the wind pressure on the front wings. Under strong wind conditions, the ends of the side arms 18, 18 may almost touch each other. Due to the resiliency of the wire 17, the wire resumes its normal configuration of Figure 2 when the wind gust has passed. The kite thus adjusts itself to the strength of the wind and flies steadily without dipping.

The folded wire 20 in the tail portion of the kite holds the tail rigid, said tail acting as a weather vane, maintaining the kite always facing the wind current. The string 29 does not interfere with the action of the tail since it is fastened substantially to the front end of fuselage 27 and the fuselage may pivot freely around the point of connection of the string thereto.

In a normal wind current, the kite will fly at about a 45 degree angle, but when the wind current becomes stronger the tail portion of the kite rises. In a strong gust of wind, the kite is substantially parallel to the ground.

For proper balance, the length of the fuselage **21** should be from about one-fourth to one-third longer than the spread of the front wings **24, 24**. If the wing spread is made greater than the fuselage length, the kite will exhibit a tendency to nose dive.

For relatively small kites made of Celluloid, it is possible to omit the wire members **17** and **20** and to utilize the resilience of the material to provide the self-compensating balancing action. The shape and proportions of such a kite, as contemplated within the spirit of the present invention, would be similar to the shape and proportions of the kite disclosed in Figures 1 to 4 but the kite would be much smaller in size.

While a specific embodiment of an airplane kite has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. An airplane kite comprising a fuselage, flexible front wings carried by said fuselage, a resilient wire secured to said front wings and fuselage and extending transversely across the kite, said wire having forwardly extending arms adjacent the side edges of the wings, and a laterally winged substantially rigid tail carried at the rear end of said fuselage.

2. An airplane kite comprising a sheet of flexible material shaped to define a longitudinally extending fuselage, laterally extending front wings and laterally extending rear wings, a transverse resilient wire secured to the fuselage and front wings, said wire having forwardly extending arms secured to the end portions of the front wings, and a second transverse wire secured to the fuselage and the rear wings, the sheet and wires being bent to define a forwardly tapering substantially V-shaped configuration for said fuselage with the front wings inclined at a relatively wide angle with respect to each other.

3. An airplane kite comprising a sheet of flexible material shaped to define a longitudinally extending fuselage portion, laterally extending front wings and laterally extending rear wings, a transverse resilient wire secured to said fuselage portion and front wings, said wire having forwardly extending arms secured to the end portions of the front wings, and a second transverse wire secured to the fuselage and the rear wings, said fuselage portion and wires being folded downwardly to define a forwardly tapering configuration for the fuselage of the kite, substantially V-shaped in cross-section, the front wings being inclined at a relatively wide angle to each other and the rear wings being similarly inclined at a wide angle with respect to each other, the length of the fuselage portion being greater than the spread of the front wings.

4. An airplane kite comprising a sheet of Celluloid shaped to define a longitudinally-extending fuselage portion, laterally-extending front wings, and laterally-extending rear wings, said fuselage portion being folded downwardly to define a forwardly tapering configuration substantially V-shaped in cross-section, the front wings being inclined at a relatively wide angle to each other and the rear wings being similarly inclined at a wide angle with respect to each other, the length of the fuselage portion being greater than the spread of the front wings, and the trailing edges of said front wings tapering rearwardly toward said fuselage portion.

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No references cited.