Feb. 27, 1962 Q. L. BRIGGS 3,022,966

KITE

Filed Feb. 17, 1960 2 Sheets-Sheet 1

Fig-1

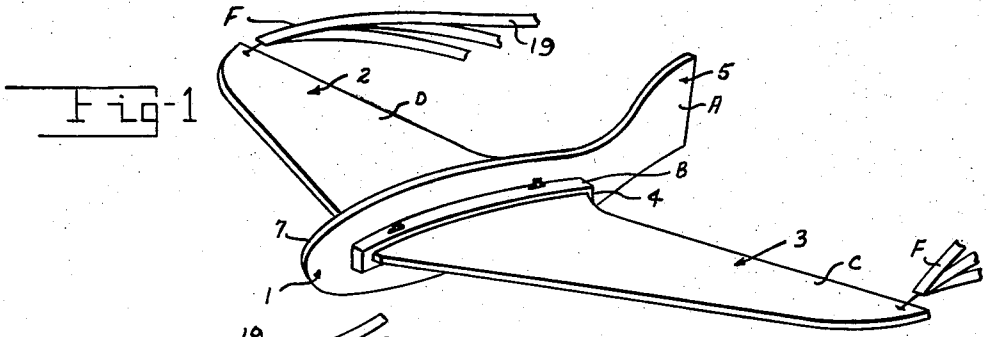


Fig-2

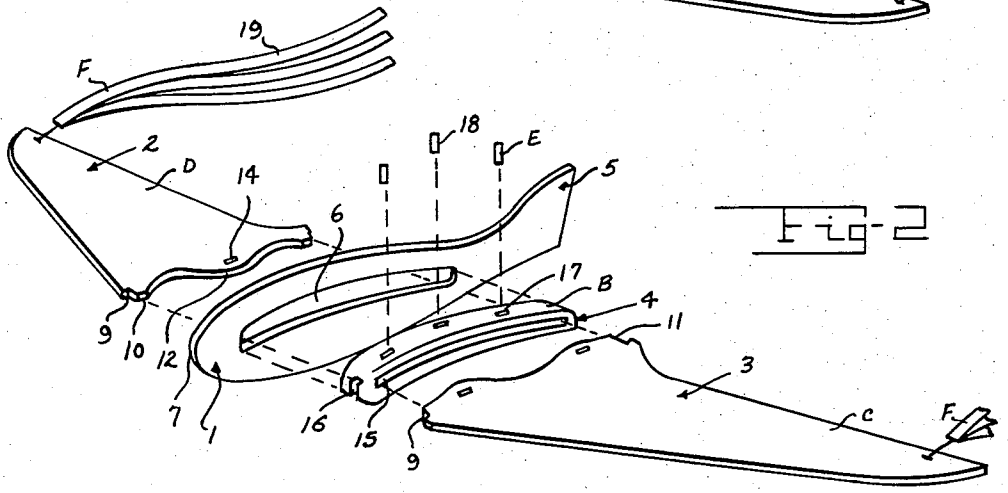
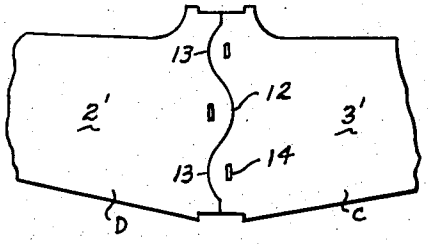


Fig-3



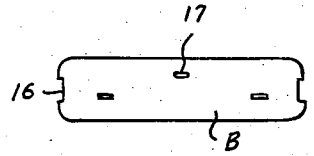


Fig-4

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KITE

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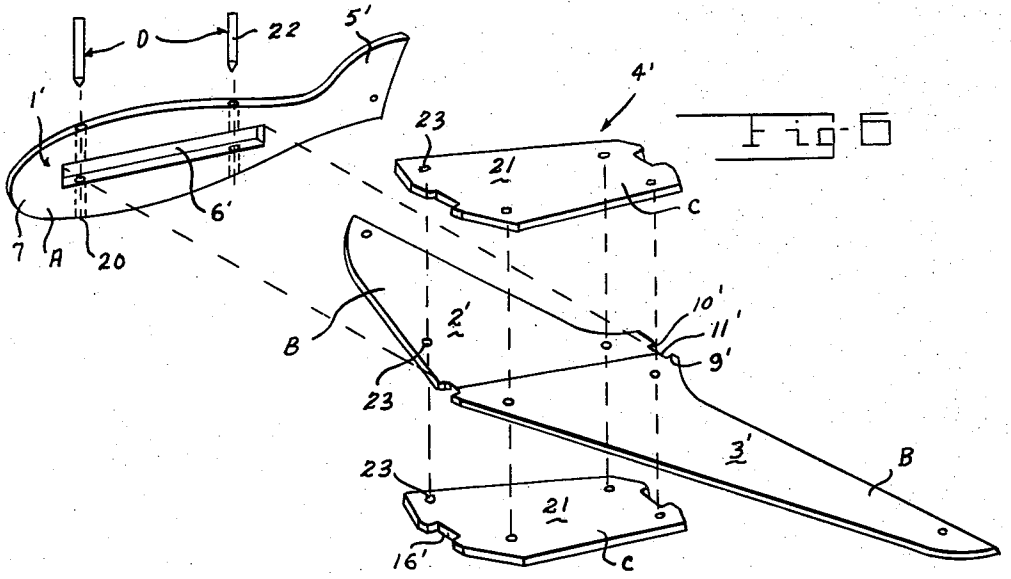


Fig-6

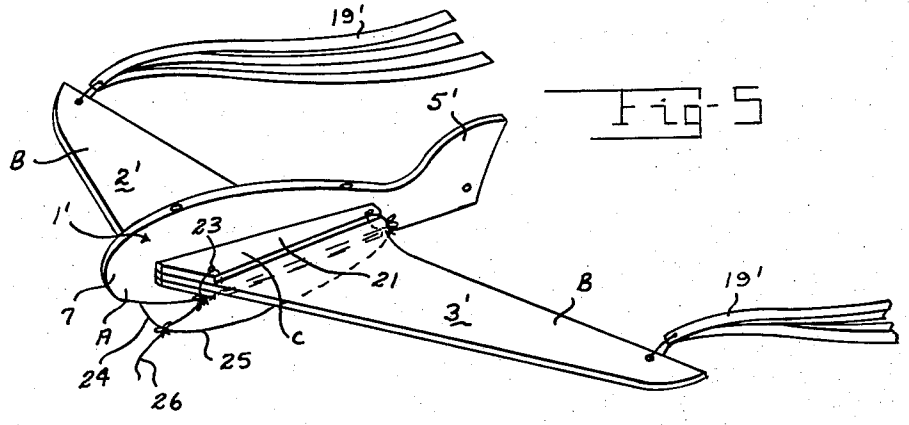


Fig-5

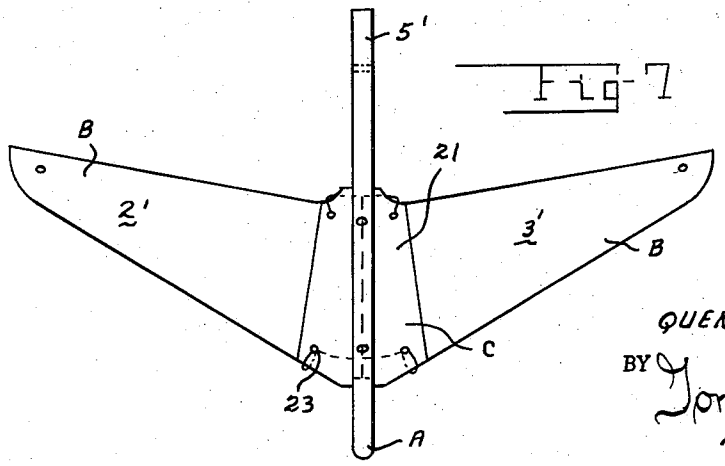


Fig-7

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KITE

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This invention relates to a novel kite.

Kites have been fabricated through the ages in many shapes and forms and from a great variety of materials. In general their efficiency has been relatively low. It has always been difficult for the average person to get a kite into the air, let alone keep it in the air once it is up. Wind velocity and direction must be extremely favorable in order to fly a conventional kite with any degree of success.

The present invention provides a novel kite which will function quite efficiently, even under conditions of relatively minimum wind velocity. Its components are so formed and so related that it can be readily launched and will inherently stabilize itself in flight. Moreover, the kite in accordance with the invention will function admirably under the influence of shifting air currents of a significant nature. Preferred embodiments of the invention are fabricated of a foamed plastic such as "Styrofoam," the properties of which can be advantageously employed to effect a unique kite.

A primary object of the invention is to provide an improved kite which may be economically fabricated, more efficient and satisfactory in use and extremely durable in character.

Another object of the invention is to provide a novel kite the components of which are so related as to facilitate getting the kite into the air.

A further object of the invention is to provide an improved kite fabricated of a foamed plastic material which can be flown in relatively high winds.

An additional object of the invention is to provide an improved kite having the general configuration of a glider which will inherently adapt to shifting air currents in flight.

A further object of the invention is to provide a kite which can be flown under conditions of minimum wind velocity.

A further object of the invention is to provide a kite possessing the advantageous structural features, the inherent meritorious characteristics and the mode of operation herein mentioned.

With the above and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawing wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

FIG. 1 is a perspective view of a kite in accordance with the invention;

FIG. 2 is an exploded view illustrating the components of the kite of FIG. 1;

FIG. 3 is a fragmentary view showing the relation of

the wing elements of the kite of FIG. 1 in an assembled condition;

FIG. 4 is a top view of the adapter employed in the device of FIG. 1;

FIG. 5 is a perspective view of a preferred embodiment of the invention;

FIG. 6 is an exploded view illustrating the components of the kite of FIG. 5; and

FIG. 7 is a top plan view of the kite of FIG. 5.

Like parts are indicated by similar characters of references throughout the several views.

The invention embodiments disclosed herein are preferably fabricated from thin sheets of a foamed plastic material such as "Styrofoam" and shaped to resemble a glider. That illustrated in FIGS. 1–4 of the drawings comprises a body 1, a pair of wing elements 2 and 3 and an adapter 4.

The body 1 is flat in a transverse sense, has the shape of an airfoil in elevation and includes a vertical stabilizer 5 at its tail end. The body 1 also has a flatly arcuate slot 6 therein which runs generally parallel to its upper surface from a point adjacent its nose 7 to a point adjacent but short of its stabilizer 5.

The wing elements 2 and 3 are inherently resilient and flexible. The have mating end portions rectangularly notched at their leading and trailing edges to define shoulders 9 to either side of their relatively projected extremities 10 and 11. As can be seen with reference to FIG. 3 of the drawings, the extremities 10 and 11 are reversely curved to precisely mate. The curve of the extremity 10 defines a relatively projected central portion 12 on the end of the wing 2 bounded by relatively recessed portions 13 to either side thereof. The curve of the extremity 11 is complementary in that it defines a central recess in the end of wing 3 bounded by relatively projected portions to either side formed to accommodate and mate with the portions 12 and 13 of wing 2. Each of the relatively projected portions of the mating ends of the wing elements has an aperture 14 therein. The apertures 14 are uniformly spaced in a manner and for purposes to be further described.

The adapter 4 consists of a short relatively thin sleeve which is inserted in and conforms to the shape of the slot 6 to thereby define a reduced passage 15 generally concentric therewith. The length of the adapter sleeve 4 is sufficient to cause its respective ends to project moderately from opposite sides of the body 1. The width of the sleeve is slightly greater than the length of the slot 6. Accordingly, notches 16 are centrally disposed in opposite side portions of the sleeve to accommodate the portions of the body 1 which define the ends of the slot. The mounting of the sleeve to the body 1 is enabled by its inherent resilience and provides a relatively fixed relation thereof in a manner believed obvious.

As may be seen with reference to FIGS. 2 and 4 of the drawings, the adapter 4 has three uniformly spaced apertures 17 in the upper portion of its laterally projected extremities, one aperture lying to one side of the body 1 in a central position relative the other two which are disposed to the other side of the body 1.

The projected extremities 10 and 11 of the wing elements 2 and 3 are nested in the respective ends of the passage 15 defined by the adapter 4 in coextensive abutting relation. The shoulders 9 to either side abut

the respective ends of the adapter to orient the wings relative thereto. The apertures 14 in the wing elements are aligned with the apertures 17 in the adapter thereby. Pins 18 projected through aligned apertures 14 and 17 fix the wings to the adapter and relative the body 1. The shape of the passage 15 as derived from that of the slot 6 causes the inner or root portions of the wings to curve in cross section to provide them with an advantageous airfoil configuration. With the wing elements so connected, their trailing edges define lines generally perpendicular to the body 1 while their leading edges are swept back from their inner to their outer ends. As shown in the drawings, streamers 19 connect to the outer ends of the wing elements.

The kite thus provided is fabricated of sections of a foamed material which are relatively thin, lending a certain degree of resilience and flexibility thereto. Strings are connected fore and aft of the body 1 to provide a dependent bridle and a tow string is connected thereto. The kite may be readily launched by merely moving it through the air while gradually letting out the tow string and pulling at it at appropriate intervals. Pulling on the string applies a drag on the body 1 causing the wings to naturally flex upwardly. On partial release of the tow string, the wings will react by flexing oppositely, lifting the kite thereby. The inherent resilience and flexibility of the kite components enable the kite to be quickly and easily launched. These properties of the kite are so advantageous that it may be readily lifted and flown where the existing wind velocity is as little as three miles per hour. Moreover, once the kite is in the air, the same properties cause the wings to automatically flex to stabilize its position under the influence of existing air currents. This is particularly important where the wind velocity is high.

Thus, the invention provides a kite having highly improved flight characteristics through a wide range of conditions. Also, the fabrication thereof from a cellular material such as described provides it with a buoyancy that enhances its lift capabilities.

FIGS. 5–7 of the drawings show a preferred embodiment of the invention. Here we have a body 1′ which is similar to the body 1 in outline but the slot 6′ therein is rectangular, rather than flatly arcuate. Also, the body 1′ has vertically aligned apertures 20 through its upper and lower portions defining the slot 6′, respectively to either end thereof.

The wings 2′ and 3′ are similar in configuration to the wing elements 2 and 3 and similarly oriented with respect to the body 1′. However, in this case the mating ends 10′ and 11′ of the wings are defined by straight edges forming lines generally perpendicular to their trailing edges.

An adapter 4′ is employed which consists of a pair of plates 21 longer than the slots 6′. Plates 21 are notched at 16′, centrally of either end, so as to seat in body 1′ within the slot and accommodate the portions of the body defining the ends of the slot. The plates 21 are thereby fixed to project laterally of the body 1′ in relatively superposed relation to accommodate the mating ends of the wing elements 2′ and 3′ therebetween. The shoulders 9′ to either side of the relatively projected ends of the wing elements abut the body 1′ to either end of the slot 6′. The wings are thereby oriented to project generally perpendicular to the body 1′.

Pins 22 projected through the vertically aligned apertures 20 in body 1′ fix the plates 21 in clamping relation to the mated ends of the wings elements confined therebetween.

The laterally projected edges of plates 21 are convergent from front to rear while their extremities conform to the configuration of the leading and trailing edges of the wings 2′ and 3′. Aligned apertures 23 are provided in the plates 21 and wings 2′ and 3′ located at respective corners of the plates, as may be seen with reference to the drawings.

String elements fore and aft of the wing elements have their ends looped through aligned apertures 23 to either side of body 1′, to further connect the wings to plates 21 and form dependent loop portions 24 of a bridle. The loop portions 24 are centrally connected under the body 1′ by a string portion 25 to which the tow line 26 is attached at the fore part of the wings. The tow string is thus connected with a dependent bridle which is wider at its forward portion than its rear portion. Streamers 19′ may be connected to the wings as shown.

This provides a preferred embodiment of the invention which functions similarly to the first described embodiment. Like characteristics thereof need not be repeated. However, in this instance the simplicity of the components and their assembly should be particularly noted. Also, here the bridle affords a particularly balanced connection of the tow string to the kite as well as serving a connecting function with respect to the wing elements. The launching and flight details here are similar to those described previously and should now be clearly obvious.

It will be seen that the kite as provided by the invention is uniquely fabricated of a cellular substance and in a form rendering it highly efficient in use. The configuration illustrated is not only appealing to the eye but enhances kite stability. Streamers are shown but these are optional.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. An airplane kite, including a streamlined body element having a transverse through opening, a wing adapter installed in said opening, said adapter exceeding said opening in length and having configurations at its ends to interengage with the ends of said opening, said adapter having a transverse through opening, wings projecting laterally from said body and having their respective inner ends received in the said transverse through opening in said adapter from opposite sides thereof, vertically extending connectors fixing said wings and said adapter in a unitary assembly, and means for attaching a bridle to the kite.

2. An airplane kite according to claim 1, characterized in that said adapter is constructed as a one-piece member notched at its ends to form the end configuration mentioned and formed with vertical openings to receive said connectors, the inner ends of said wings having corresponding aligned openings through which said connectors are passed.

3. An airplane kite according to claim 1, characterized in that said adapter comprises vertically spaced apart plates clamping the inner ends of said wings therebetween and having aligned vertical openings to receive said connectors, said connectors passing through said wings, and said plates being each formed with aligned notches at each end to define the end configurations mentioned.

4. An airplane kite according to claim 1, characterized in that said last named means comprises attachment

means occupying longitudinally spaced apart locations on the underside of said body.

5. An airplane kite according to claim 1, characterized in that said last named means comprises longitudinally spaced apart supports in underlying transversely extending relation to said body and each attached at its ends to said adapter on opposite sides of the body.

6. An airplane kite according to claim 1, characterized in that principal parts of said kite including said body and said wings are constructed of a foamed plastic material having sufficient rigidity to maintain an airplane configuration and to reduce the likelihood of damage yet

light in weight and capable of flexing under the influence of air currents to stabilize the kite in flight.

References Cited in the file of this patent

UNITED STATES PATENTS

2,136,717	Waldock	Nov. 15, 1938
2,724,211	Bloom	Nov. 22, 1955
2,896,370	De Witt	July 28, 1959

FOREIGN PATENTS

514,997	Italy	Feb. 11, 1955