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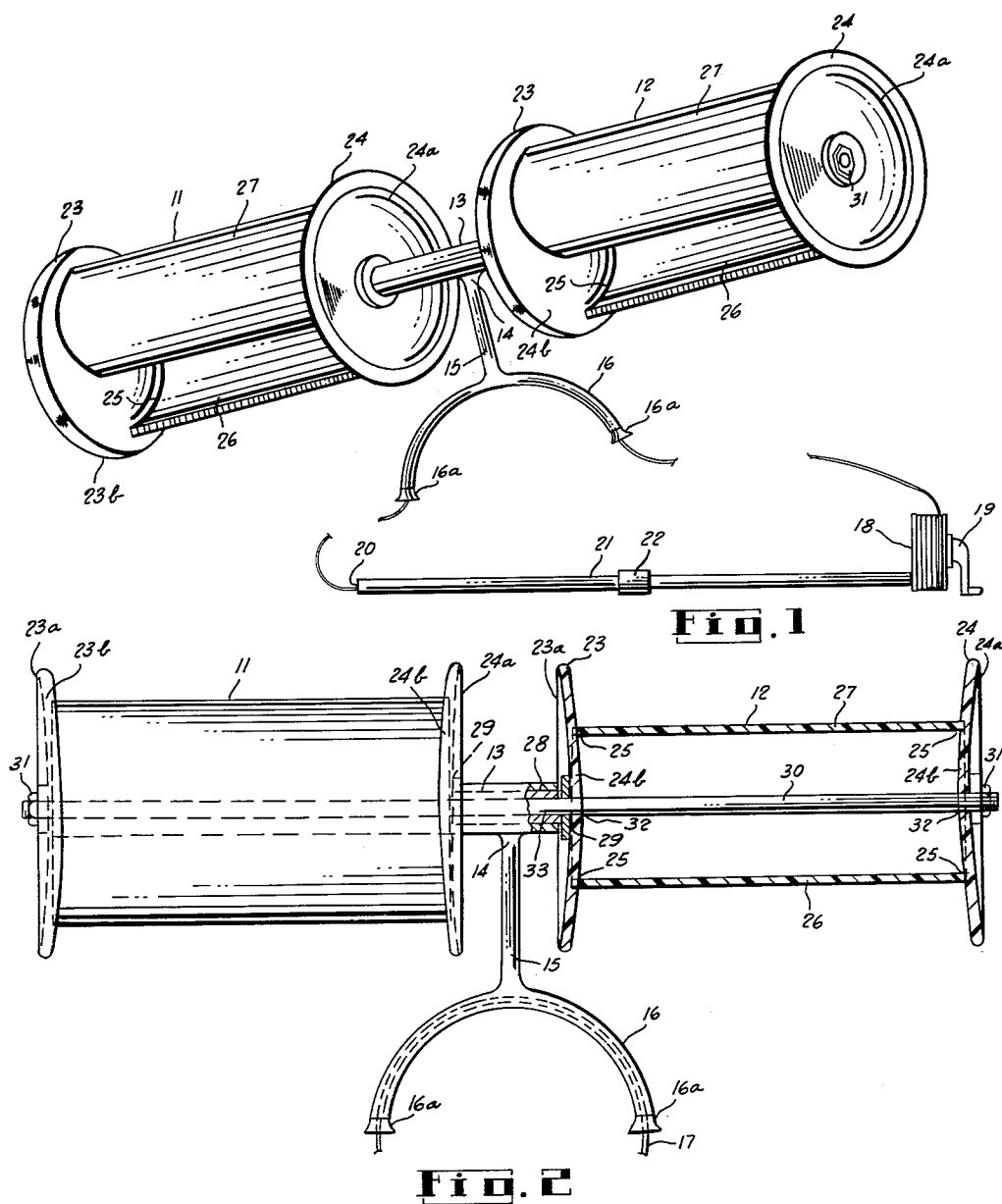
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3,026,073

ROTARY WINGED KITE

Filed July 6, 1959

2 Sheets-Sheet 1



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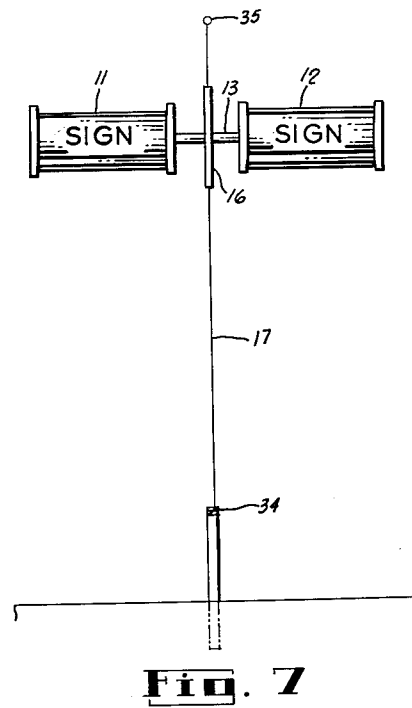
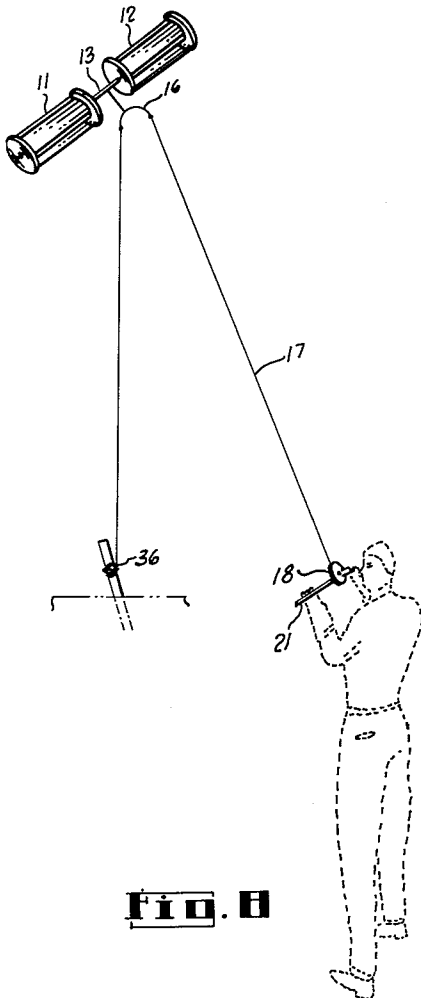
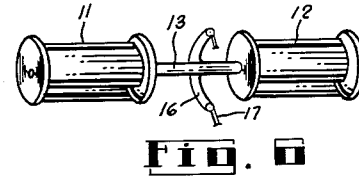
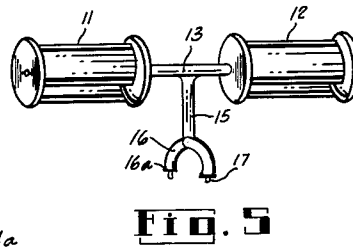
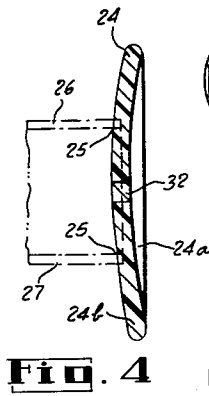
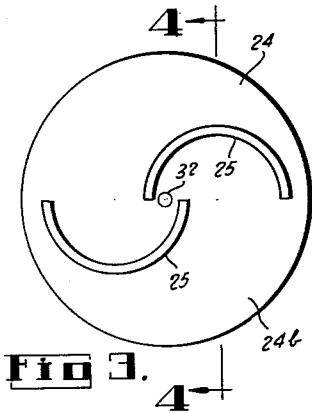
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ROTARY WINGED KITE

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2 Sheets-Sheet 2



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3,026,073

ROTARY WINGED KITE

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7 Claims. (Cl. 244-153)

This invention relates to kites and has particular reference to a kite having a pair of rotary wings, or air foils, which can be controlled from the ground by novel means, which enable the operator to produce a variety of interesting, entertaining, and educational results.

An object of the invention is to generally improve kites, and to provide a rotary kite which is simple in construction, easy to assemble and take down, and one which is extremely versatile in its operation.

Another object of the invention is to provide a known down kite assembly, which is easy to pack, transport, and store in a very limited space.

Another object of the invention is to provide a kite structure, which lends itself to a variety of different flying combinations and arrangements.

Another object of the invention is to provide a rotary winged kite, with novel means for securing together the parts.

Another object of the invention is to provide a device of the character described with novel means for manipulating the kite while in flight.

Another object of the invention is to provide a device of the character indicated, which may be controlled from the ground with a single string.

Another object of the invention is to provide a device of the character indicated, which may be used as a display sign, or the like, by mounting it on a string or wire, one end of which is fixed to the ground, and the other end of which is fixed to an overhead object, so that the device may slide up and down the string, or wire, under the influence of the wind.

I am aware of the fact that rotary wings, as herein disclosed, are old but I herein disclose a novel method of assembling such wings and I combine them with other elements to produce new results.

The foregoing and other objects and advantages of the invention will become more apparent as the description proceeds, reference being made from time to time to the accompanying drawings, forming part of the within disclosure, in which drawings:

FIG. 1 is a perspective view of a device embodying the invention.

FIG. 2 is an elevational view of the device shown in FIG. 1, with parts in section.

FIG. 3 is a view of one of the end members, taken substantially on the line 3-3 of FIG. 2.

FIG. 4 is a section taken substantially on the line 4-4 of FIG. 3.

FIG. 5 is a reduced view, in perspective, similar to FIG. 1 and illustrating the curved tubular member positioned parallel with the axis of the wings.

FIG. 6 is a view similar to FIG. 5, except the curved tubular member is positioned perpendicular to the axis of the wings.

FIG. 7 is a modified form of the invention, in which the tubular control member is straight, instead of curved, and is mounted on a vertically positioned string, or wire, which is tethered at top and bottom.

FIG. 8 is a perspective view of a device embodying the invention, being controlled by means of a string, one end of which is secured to the ground and the other end of which is fastened to a reel.

Referring now more particularly to the drawings it will be understood that in the embodiment herein disclosed, the reference characters 11 and 12 indicate, in

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general, a pair of rotary wings, which are journaled for rotation, at opposite ends of the spacer 13, to which is secured, as at 14, a rod 15, to the opposite end of which is secured a tubular member 16, which slidably receives a single control string 17, one end of which is secured to a reel 18, which is provided with a hand crank 19. The other end of the string 17 is secured, as at 20, to a control rod 21, which is preferably made in two sections, which are secured together as at 22. Making the control rod 21 in two sections enables me to disjoin the rod at 22, and in effect make two short control rods, one of which may be held in each hand. This feature coupled with the string slidable in the hollow guide member enables me to maneuver the device in many different flying operations, which are not possible with other devices now known to the public. The ends of the tubular member 16 are preferably flared, as at 16A, so that the string 17 may freely slide inside of the tubular member 16, without danger of having the string damaged by the ends of the tubular member 16.

Each of the wings 11 and 12 is formed with end members 23 and 24, the outside faces 23A and 24A of which are concavely formed, and the inside faces 23B and 24B of which are formed with two semi-circular recesses 25, which receive the ends of the semi-tubular members 26 and 27, which form the air foils for the wings.

Positioned on the inside of the spacer 13 is a rotatable member 28 (FIG. 2), which is slightly longer than the spacer 13 and is provided at either end with a washer 29, which washers 29 contact the end members 23 and 24 and rotate therewith. A tie rod 30 having an enlarged end 31 extends through suitable openings 32, formed in each end member 23 and 24 and threadably engages the rotating member 28, as at 33, and serves to hold the end members 23 and 24 and the semi-cylindrical members 26 and 27 in assembled relation. The end members 23 and 24 and the semi-cylindrical members 26 and 27 are preferably formed of a urathene foam material, or thin aluminum sheets, which are very light in weight and offer very little resistance to the free rotation of the member 28 inside the spacer 13. Thus it will be seen that I have disclosed a novel means for securing together the parts comprising the wings and have also provided a novel means for rotatably supporting said wings.

In FIG. 5, I have shown the tubular member 16 positioned parallel to the axis of the wings 11 and 12, whereas in FIG. 6, I show the tubular member 16 being positioned in a plane, which is perpendicular to the axis of the wings 11 and 12. In FIG. 7, I illustrate the tubular member 16 as being a straight tube positioned at right angles to the spacer 13. In this embodiment, the wings 11 and 12 are provided with intelligible subject matter, which is readable as the wings 11 and 12 rotate. In this embodiment the string 17 is tethered at the bottom, as at 34, to the ground, and is secured at the top, as at 35, to some overhead object (not shown), so that the device is free to move up and down on the string, or wire 17 as the wings rotate under the influence of the wind.

In FIG. 8, I show the device being manipulated by an operator, who holds a control stick 21, at one end of which is mounted the reel 18. In this embodiment one end of the string 17 is secured to the reel, as previously described, and the other end of the string is secured to a stake, as at 36, set in the ground.

The manipulation of the device is the same in each instance, except as shown in FIG. 7, where the string is fixed. In the other embodiments the device is raised, or lowered, by lengthening and shortening the string and is maneuvered by manipulating the control stick 21.

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It is believed that the operation of the device is obvious from the foregoing description.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a device of the character indicated, including a pair of rotary wings arranged in spaced end to end relation, with journal means for said wings and a spacer therebetween, the combination of a hollow guide member secured to said spacer, a control string slidable in said guide member, one end of said control string being wound on a reel secured to a manually controlled stick, the other end of said string being secured to the opposite end of said stick.

2. The structure of claim 1, in which said guide member lies in a plane parallel with the axis of said wings.

3. The structure of claim 1, in which said guide member lies in a plane angularly positioned with respect to the axis of said wings.

4. The structure of claim 1, in which the said control stick is made in separable parts, whereby the ends of said string may be controlled separately.

5. The structure of claim 1, in which the ends of said hollow guide member are flared to permit easy travel of said string therein, regardless of the angles of incidence between the device and said string.

6. In a device of the character indicated, including a pair of rotary wings arranged in spaced end to end re-

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lation, with journal means for said wings and a spacer therebetween, the combination of a hollow guide member secured to said spacer, a control string slidable in said guide member, one end of said control string being wound on a reel secured to a manually controlled stick, the other end of said string being fixed to a fixed object removed from said stick and the rotary wings.

7. The structure of claim 1, in which each rotary wing consists of a pair of saucer-like end members, each having a pair of semi-circular grooves formed in its inner face and having supported therebetween by said grooves a pair of semi-cylindrical air foil members, arranged with their curvatures oppositely disposed.

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