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Segerson et al.

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[54] **MECHANISM FOR RELEASABLY ATTACHING AN OBJECT TO A KITE**

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Related U.S. Patent Documents

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Appl. No.: **951,781**
Filed: **Oct. 16, 1978**

[51] **Int. Cl.**[3] **B64C 31/06**

[52] **U.S. Cl.** ..... **244/155 R;** 24/133; 24/131 R; 43/4.5

[58] **Field of Search** ..... 244/153 R, 155 A, 155 R; 43/4, 4.5, 43.13; 24/131 R, 132 R, 133

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Primary Examiner—Galen L. Barefoot
Attorney, Agent, or Firm—Walker & McKenzie

[57] **ABSTRACT**

A mechanism for releasably attaching a parachute to a kite to allow the parachute to be carried aloft by the kite and to be released while the kite is in flight when the flight string of the kite is merely given slack. The mechanism [includes] *may include* a first member fixedly attached to the kite and a second member pivotally attached to the first member and fixedly attached to the end of the flight string. The second member is moveable from a first position in which the parachute is attached to the kite to a second position in which the parachute is released from the kite. The second member is held in the first position when the kite is aloft and the flight string is held substantially taut. The second member will then move to the second position when the flight string is given slack.

8 Claims, 8 Drawing Figures

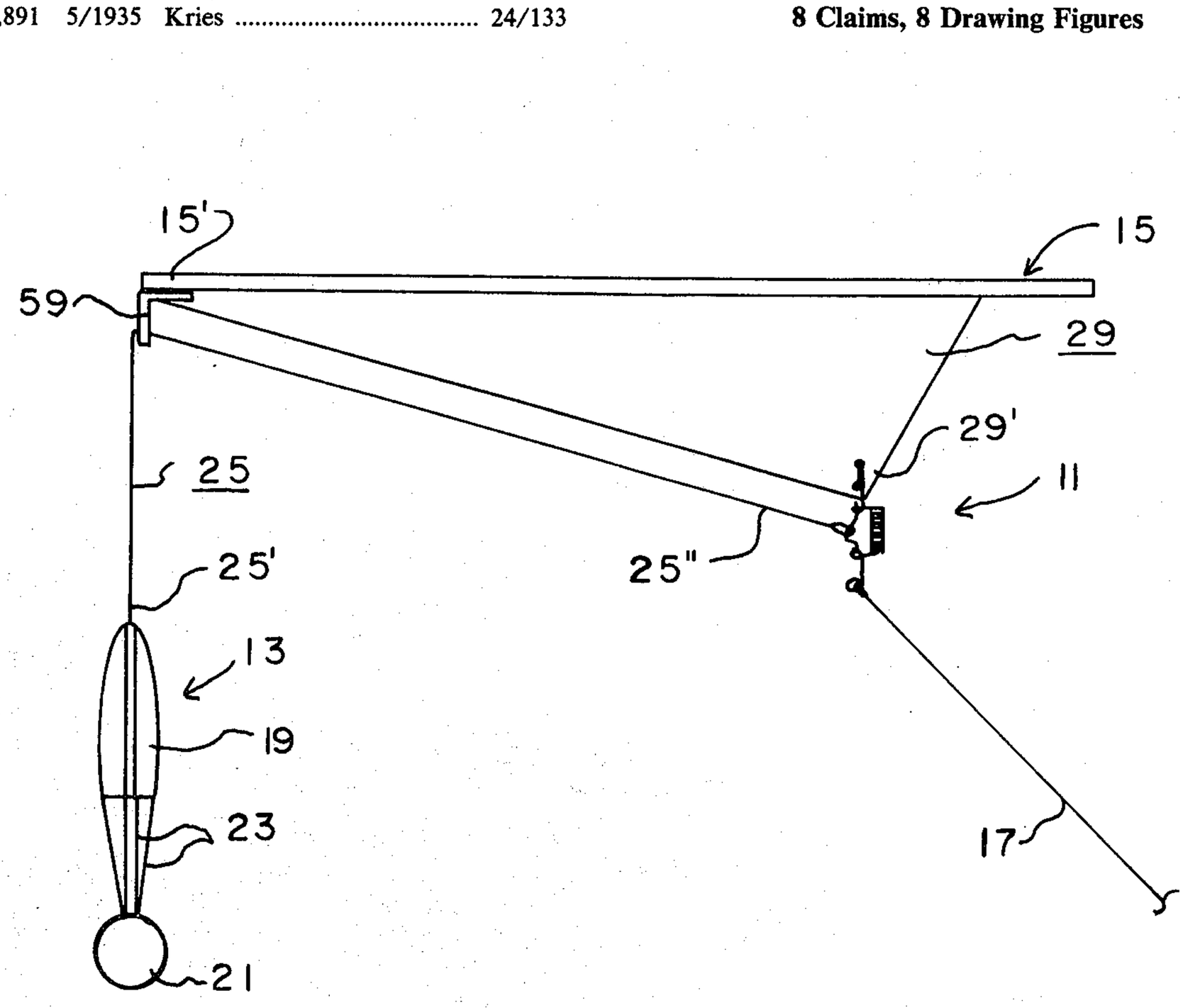


FIG. 1

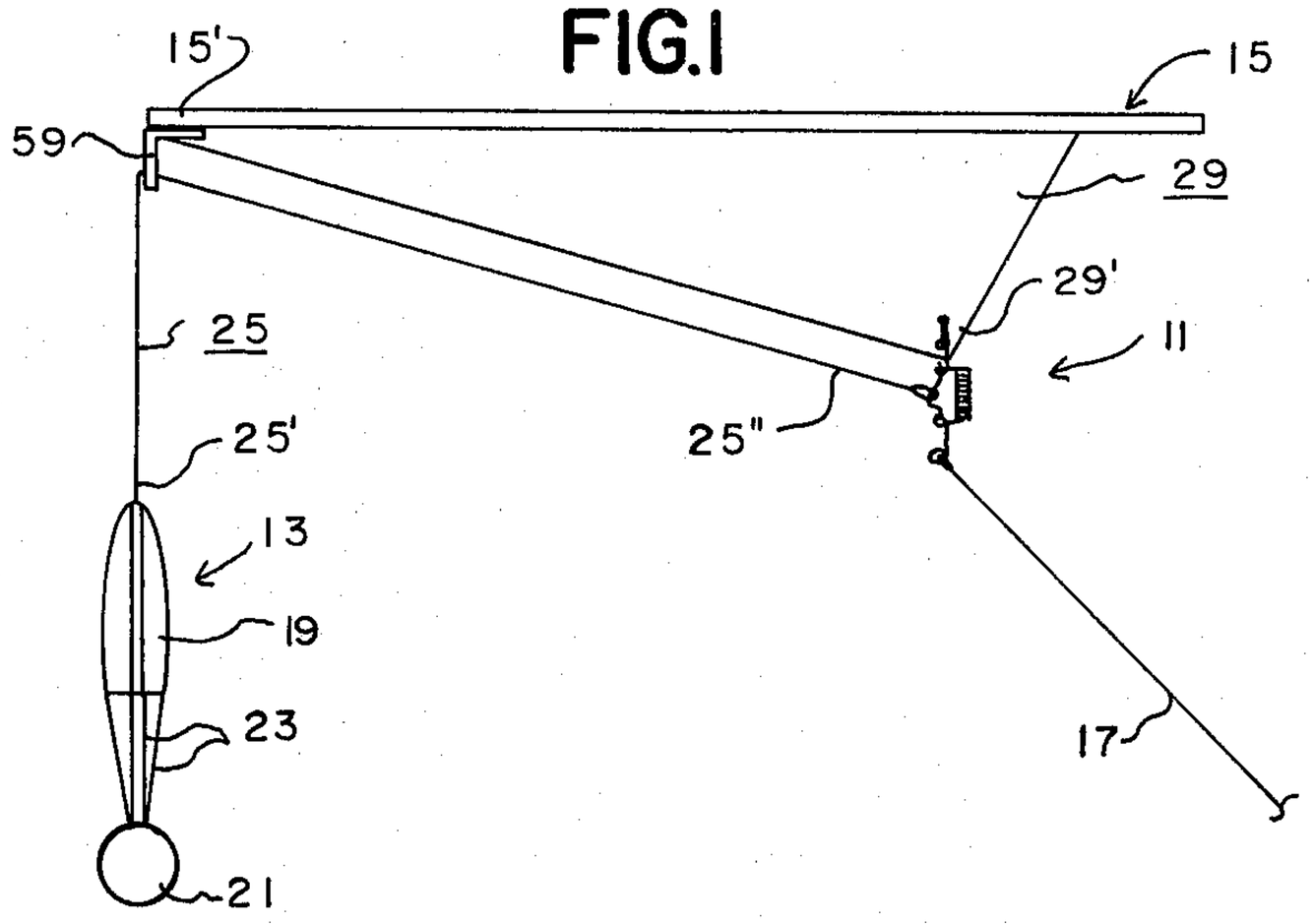


FIG. 2

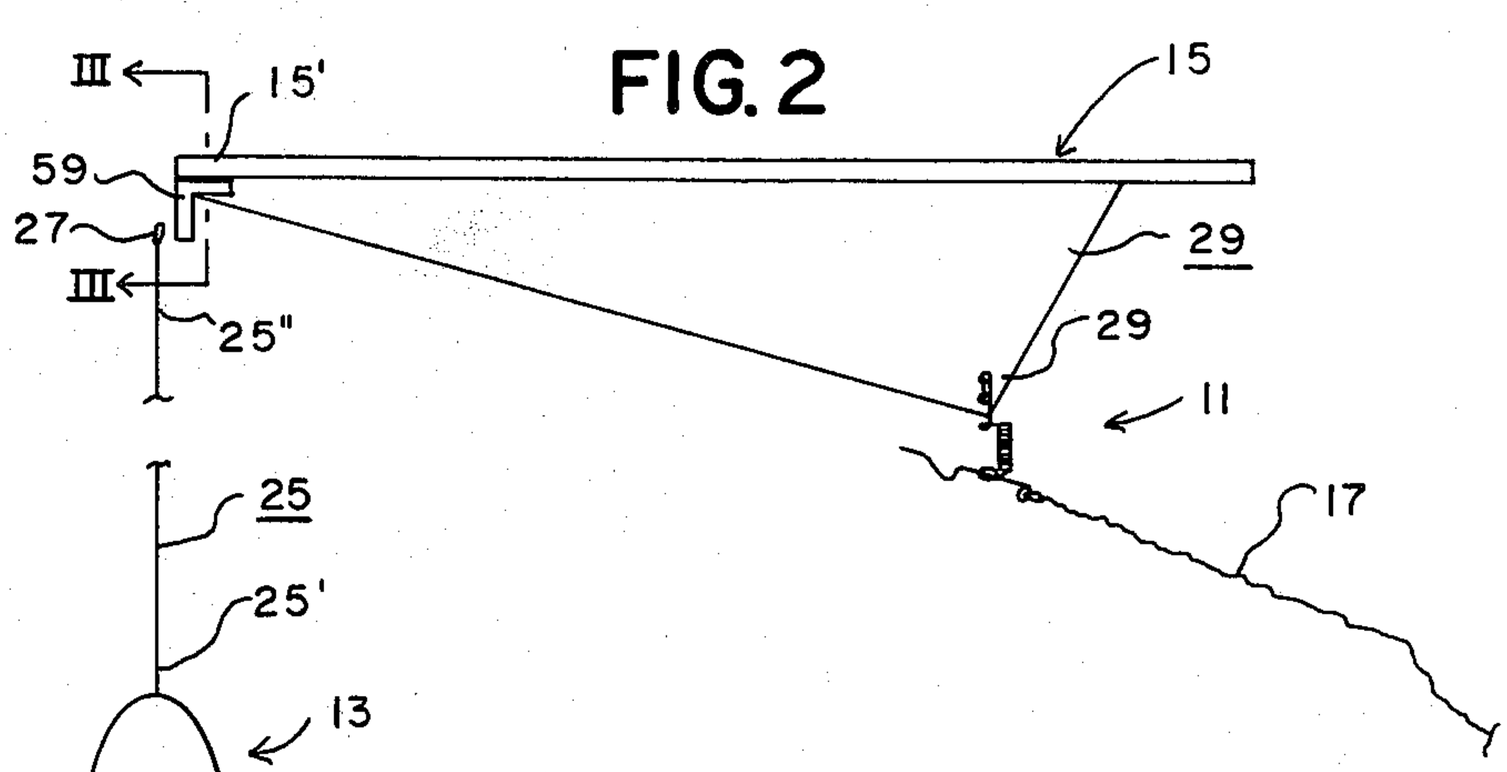
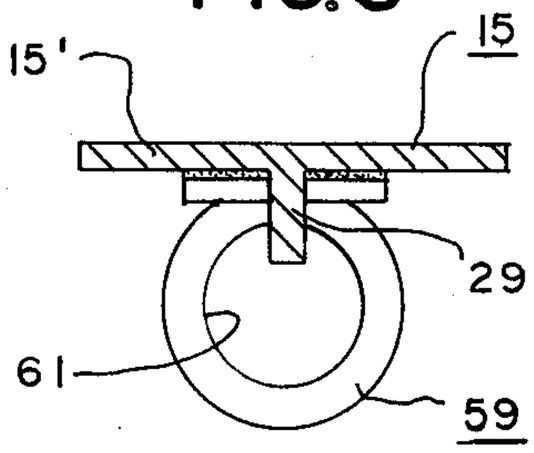


FIG. 3



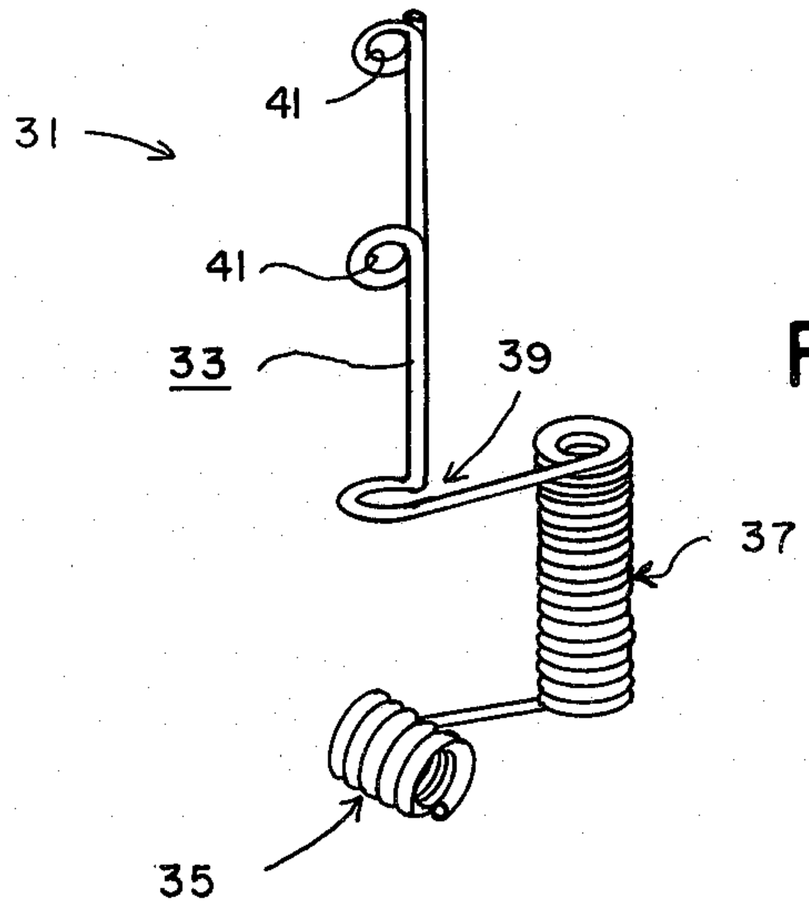
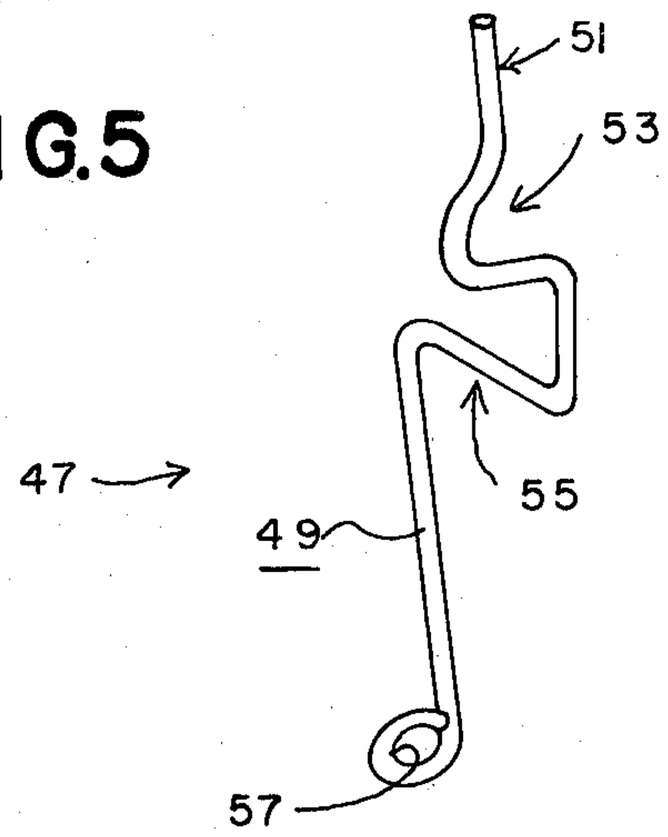


FIG.4

FIG.5



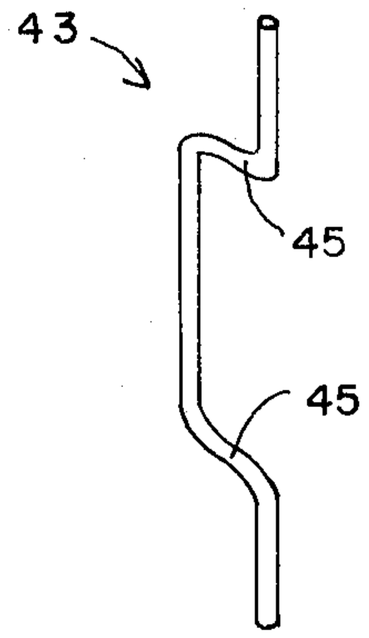


FIG. 6

FIG.7

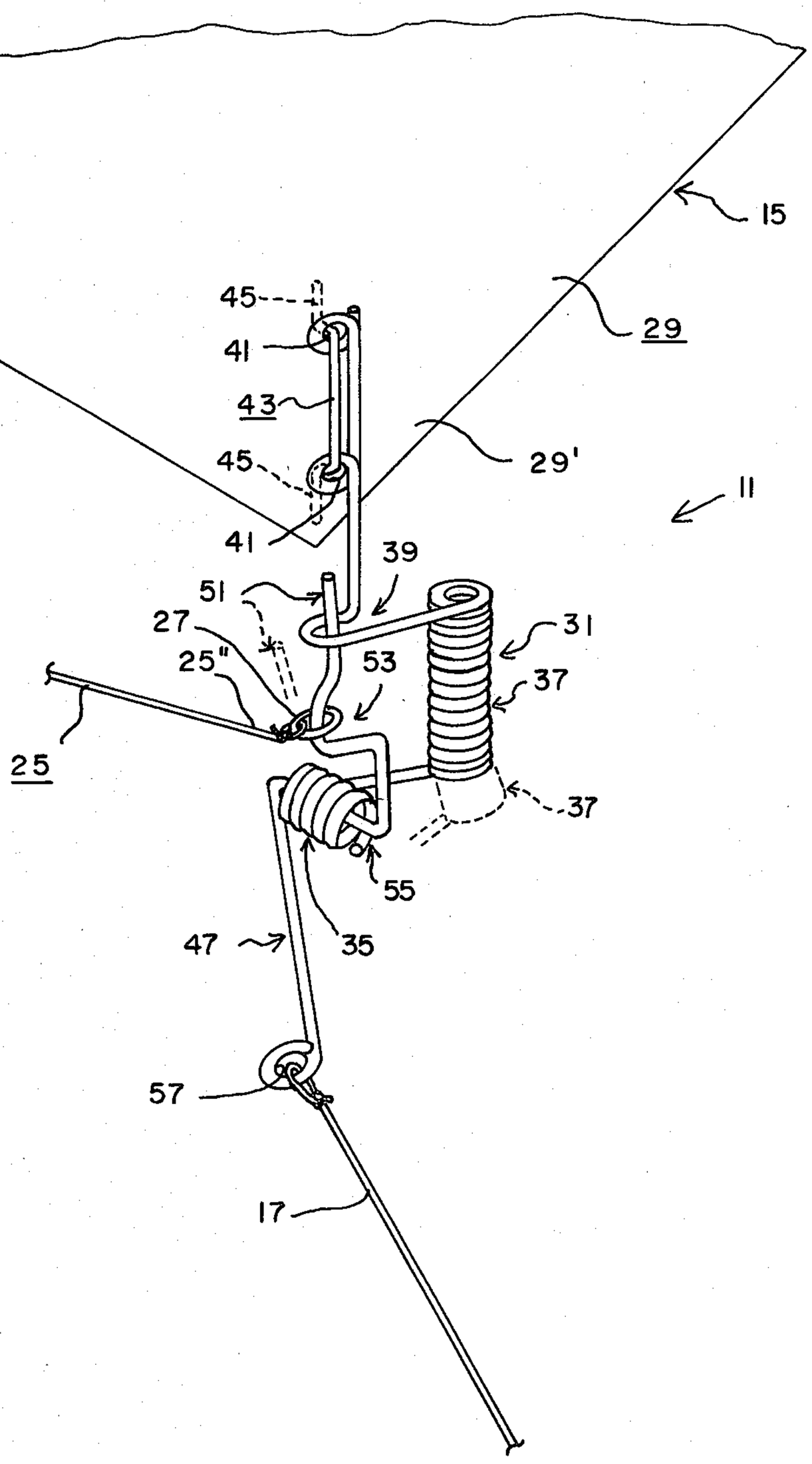
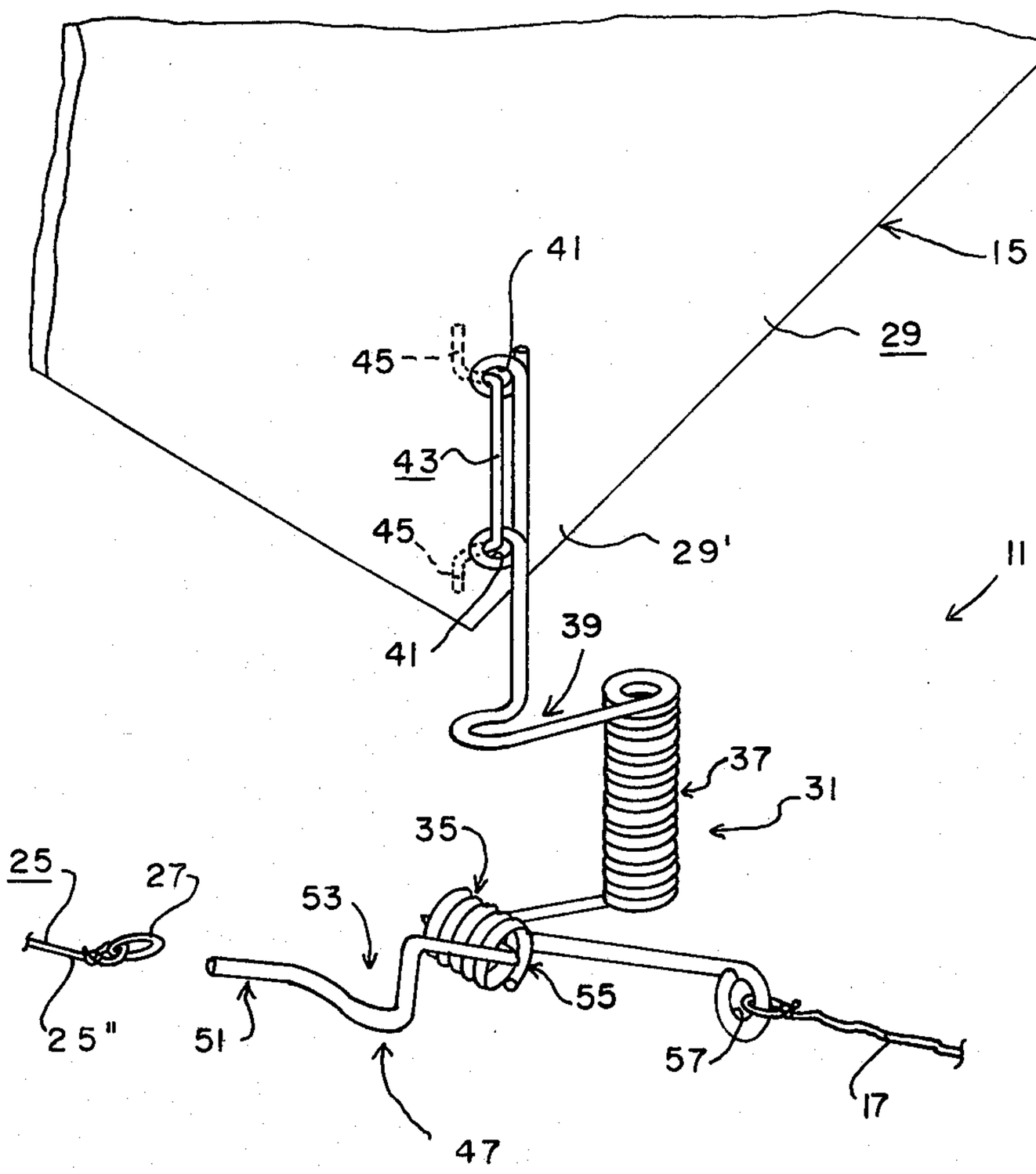


FIG. 8



MECHANISM FOR RELEASABLY ATTACHING AN OBJECT TO A KITE

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND OF THE INVENTION

1. Field of the Invention:

This invention relates in general to kites and specifically to mechanisms for releasably attaching objects to kites.

2. Description of the Prior Art:

Heretofore, various kites and attachments therefore have been developed which relate generally to the present invention. See, for example, Fletcher, U.S. Pat. No. 692,998; Haight, U.S. Pat. No. 1,484,775; Albrecht, U.S. Pat. No. 1,735,309; Ater, U.S. Pat. No. 1,816,814; Berthene, U.S. 2,575,157; Toth, U.S. Pat. No. 2,822,998; Tucci, U.S. Pat. No. 3,052,434; Fricke, U.S. Pat. No. 3,088,701; Bury, U.S. Pat. No. 3,583,662; and Stritzke, U.S. Pat. No. 3,960,347. None of the above patents disclose or suggest the present invention.

The prior art devices for releasably attaching objects to kites rely on relatively complex mechanisms (e.g., the knife-carrier mechanism of Fletcher, the trolley mechanism of Haight, the balloon mechanism of Berthene, and the like) and/or a pronounced jerking, tugging or whipping motion of the flight string for causing an object carried by a kite to be released.

SUMMARY OF THE INVENTION

The present invention is directed towards improving upon prior mechanism for releasably attaching objects to kites. The concept of this invention is to provide such a mechanism which is relatively simple in construction and operation and which does not require any jerking, tugging or whipping motion of the flight string other than that which normally occurs in flying a kite to release the object.

The mechanism of the present invention includes [a first member] *means* for being fixedly attached to a kite and [a second member for being pivotally attached to the first member and] for being fixedly attached to the end of the flight string of the kite. The [second member] *means* is moveable between a first position in which the object is attached to the kite and a second position in which the object is released therefrom. The [second member] *means* is held in the first position when the kite is aloft and the flight string is held substantially taut. The [second member] *means* moves to the second position when the flight string is given slack.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevational view of a kite showing the mechanism of the present invention attached thereto and showing an object attached to the kite.

FIG. **2** is a side elevational view of a kite similar to FIG. **1** but showing the object being released from the kite.

FIG. **3** is an enlarged sectional view as taken on line III—III of FIG. **2**.

FIG. **4** is a perspective view of [the] *a* first member of the mechanism of the present invention.

FIG. **5** is a perspective view of [the] *a* second member of the present invention.

FIG. **6** is a perspective view of a staple member of the present invention.

FIG. **7** is a perspective view of the mechanism of the present invention showing the mechanism attached to a kite and showing the second member of the mechanism of the present invention in the first position.

FIG. **8** is a perspective view of the mechanism of the present invention showing the mechanism attached to a kite and showing the second member of the mechanism in the second position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The mechanism **11** of the present invention is for releasably attaching a parachute **13** or other object to a kite **15** for allowing the parachute **13** to be carried aloft by the kite **15** as depicted in FIG. **1** and to be released while the kite **15** is *in* flight and when the flight string **17** of the kite **15** is given slack as depicted in FIG. **2**. The parachute **13** may be of any substantially typical construction including an air bag **19**, a weight **21**, and a plurality of strings **23** connecting the weight **21** to the air bag **19** as will be apparent to those skilled in the art. An elongated flexible member such as a length of string **25** is attached to air bag **19** for use in attaching the parachute **13** to the mechanism **11**. More specifically, the length of string **25** has a first end **25'** fixedly attached to the air bag **19** in any manner apparent to those skilled in the art and has a second end **25''** for being releasably attached to the mechanism **11** in a manner which will hereinafter become apparent. A ring member **27** may be attached to the second end **25''** of the length of string **25** for use in releasably attaching the length of string **25** to the mechanism **11**. The kite **15** may be of any Preferably, the kite **15** is of the type having a downwardly depending keel member **29** as clearly shown in the drawings extending along the middle of the kite **15** from front to rear.

The mechanism **11** includes *means for being pivotally attached to the kite 15 and for being fixedly attached to the end of the flight string 17. The means has a keeper portion for selectively retaining the parachute 13 or other object to be carried aloft by the kite 15. The means has a first position in which the keeper portion will retain the parachute 13 and has a second position in which the keeper portion will release the parachute 13. The means is held in the first position when the kite 15 is aloft and the flight string 17 is held substantially taut and moves to the second position when the kite 15 is aloft and the flight string 17 is given slack.*

In one embodiment, the mechanism 11 includes a first member **31** (see, in general, FIG. **4**) for being fixedly attached to the kite **15**. The first member **31** is preferably formed out of a single, elongated length of spring wire **33**. The length of wire **33** is preferably formed or bent so as to include a hollow tube-like portion **35**, a tension spring portion **37**, a catch portion **39** and a pair of apertures **41** as clearly shown in the drawings for reasons which will hereinafter become apparent. The tension spring portion **37** is located between the catch portion **39** and the tube-like portion **35** as clearly shown in FIG. **4** for allowing the catch portion **39** to move relative to the tube-like portion **35** for reasons which will hereinafter become apparent.

The mechanism **11** may include a staple member **43** (see, in general, FIG. **6**) for fixedly attaching the first

member **31** to the kite **15**. More specifically, the staple member **43** includes a pair of leg portions **45** for extending through the pair of apertures **41** of the first member **33** and through a portion of the kite **15** for being turned back at a substantially 90° angle to thereby fixedly attach the first member **31** to the kite **15** as clearly shown in FIGS. **7** and **8**. Preferably, the staple member **43** is used to attach the first member **31** to the kite **15** at substantially the lowest point **297** of the keel member **29** as clearly shown by the drawings.

The mechanism **11** includes a second member **47** (see, in general, FIG. **5**) for being pivotally attached to the first member **31** and for being fixedly attached to the end of the flight string **17**. The second member **47** is preferably formed of a single, elongated length of spring wire **49**. The length of wire **49** is preferably formed or bent so as to include a pin portion **51**, a keeper portion **53**, a pivot rod portion **55**, and an aperture **57**, as clearly shown in FIGS. **7** and **8** to thereby pivotally attach the second member **47** to the first member **31**. The pin portion **51** of the second member **47** coacts with the catch portion **39** of the first member **31** for causing the second member **47** to be selectively held in a first position as shown in solid lines in FIG. **7**. The keeper portion **53** of the second member **47** coacts with the ring member **27** to selectively retain the parachute **13** to the kite. More specifically, the ring member **27** encircles the length of wire **49** at the keeper portion **43** as clearly shown in FIG. **7**. The flight string **17** is attached to the second member **47** by being extended through the aperture **57** and being tied thereto as clearly shown in FIGS. **7** and **8**.

The mechanism **11** preferably includes a hoop member **59** for being attached to the tail end **15'** of the kite **15** as clearly shown in FIGS. **1** and **2**. The hoop member **59** has an aperture **61** therethrough (see FIG. **3**) of a size sufficient to allow the ring member **27** to freely pass therethrough. The hoop member **59** may be fixedly attached to the kite **15** in any manner apparent to those skilled in the art such by way of glue or the like.

The operation and use of mechanism **11** of the present invention is quite simple. Once the first member **31** and the hoop member **59** have been attached to the kite **15** as heretofore discussed, with the second member **47** pivotally attached to the first member **31**, the parachute **13** is attached to the kite **15** by passing the ring member **27** and the length of string **25** through the aperture **61** of the hoop member **59** as depicted in FIG. **1**. The ring member **27** is then passed over the pin portion **51** of the second member **47** and positioned in the keeper portion **53** thereof. The pin portion **51** of the second member **47** is then positioned within the catch portion **39** of the first member **31** as clearly shown in FIG. **7**. Next, with the flight string **17** attached to the second member **47**, the kite **15** is launched in a conventional manner. Once the kite **15** is aloft the resistance of the air on the kite **15** will cause the tension spring portion **37** of the first member **31** to stretch somewhat as shown in broken lines in FIG. **7**. This will cause the pin portion **51** of the second member **47** to become disengaged from the catch portion **39** of the first member **31** as shown in broken lines FIG. **7**. The second member **47** will remain in the first position with the ring member **27** held in the keeper portion **53** as long as the flight string **17** is held substantially taut. However, when it is desired to release the parachute **13** from the kite **15**, the flight string **17** is given slack and the second member **47** will pivot to the second position as shown in FIG. **8** whereupon the weight **21** of the

parachute **13** will cause the ring member **27** to slide off the second member **47** and pass through the aperture **61** of the hoop member **59** allowing the parachute **13** to drop to the ground due to the force gravity as depicted in FIG. **2**.

Although the invention has been described and illustrated with respect to a preferred embodiment thereof, it is not to be so limited since changes and modifications may be made therein with or within the full intended scope of the invention.

We claim:

1. A mechanism for releasably attaching an object to a kite to be carried aloft by the kite and to be released while the kite is in flight when the flight string of the kite is given slack, said mechanism comprising:

(a) a first member for being fixedly attached to the kite; and

(b) a second ember for being pivotally attached to said first member and for being fixedly attached to the end of the flight string, said second member including a keeper portion for selectively retaining the object to be carried aloft by the kite, said second member having a first position in which said keeper portion will retain said object and having a second position in which said keeper portion will release said object, said second member being held in said first position when the kite is aloft and the flight string is held substantially taut, said second member moving to said second position when the kite is aloft and the flight string is given slack.

2. The mechanism of claim **1** in which said first member includes a catch portion and in which said second member includes a pin portion for being selectively held within said catch portion of said first member.

3. The mechanism of claim **2** in which said first member includes a tube-like portion and in which said second member includes a pivot rod portion for passing through said tube-like portion of said first member to thereby pivotally attach said first and second members together.

4. The mechanism of claim **3** in which said first member includes a tension spring portion located between said catch portion and said tube-like portion for allowing said catch portion to move relative to said tube-like portion.

5. The mechanism of claim **4** in which is included a staple member; said first member has a pair of apertures for coacting with said staple member to allow said first member to be fixedly attached to the kite; and in which said second member has an aperture for coacting with the end of the flight string to allow said second member to be fixedly attached to the end of the flight string.

6. The mechanism of claim **5** in which said first member is formed of a single length of wire and in which said second member is formed of a single length of wire.

7. The mechanism of claim **6** in which is included a hoop member for being attached to the tail end of the kite; in which said first member is for being fixedly attached to the mid-portion of the kite; and in which is included an elongated, flexible member for being attached to the object to be releasably attached to the kite, said elongated, flexible member having an aperture therethrough adjacent the end thereof opposite the object for being releasably positioned on said second member.

8. A mechanism for releasably attaching an object to a kite to be carried aloft by the kite and to be released while the kite is in flight when the flight string of the kite is given

slack, said mechanism comprising: a means for being pivotally attached to the kite and for being fixedly attached to the end of the flight string, said means including a keeper portion for selectively retaining the object to be carried aloft by the kite, said means having a first position in which said keeper portion will retain said object and having a second

position in which said keeper portion will release said object, said means being held in said first position when the kite is aloft and the flight string is held substantially taut, said means moving to said second position when the kite is aloft and the flight string is given slack.

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