March 5, 1957 J. CAROFF 2,783,958

KITE AND KITE PACKAGE

Filed July 21, 1955 2 Sheets-Sheet 1

Fig. 1.

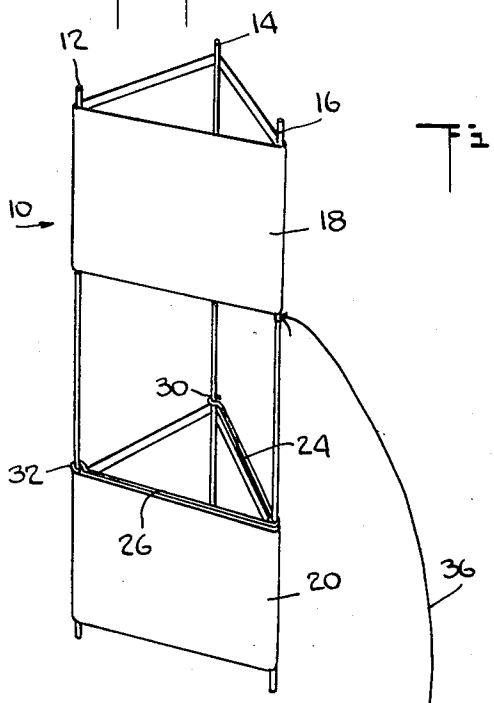
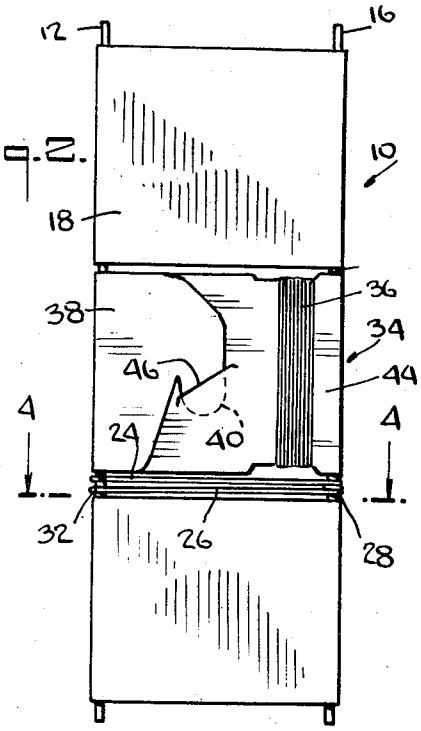


Fig. 2.



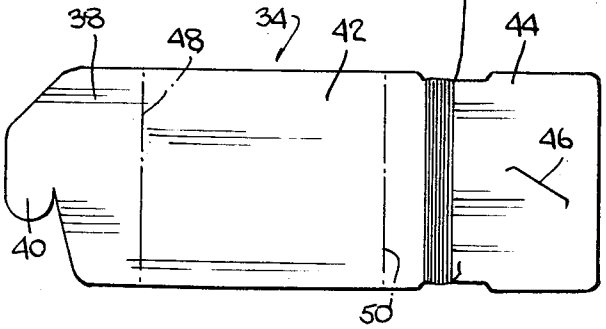


Fig. 5.

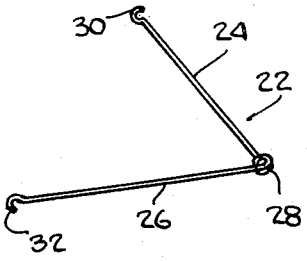


Fig. 3.

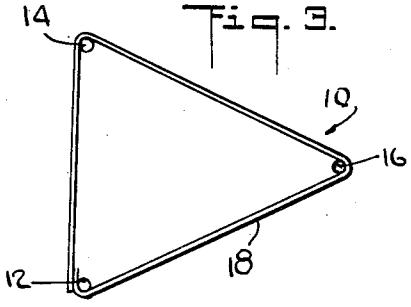
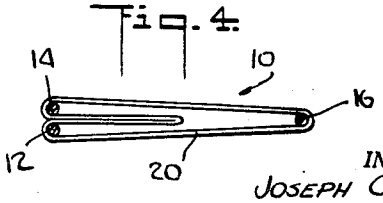


Fig. 4.



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KITE AND KITE PACKAGE

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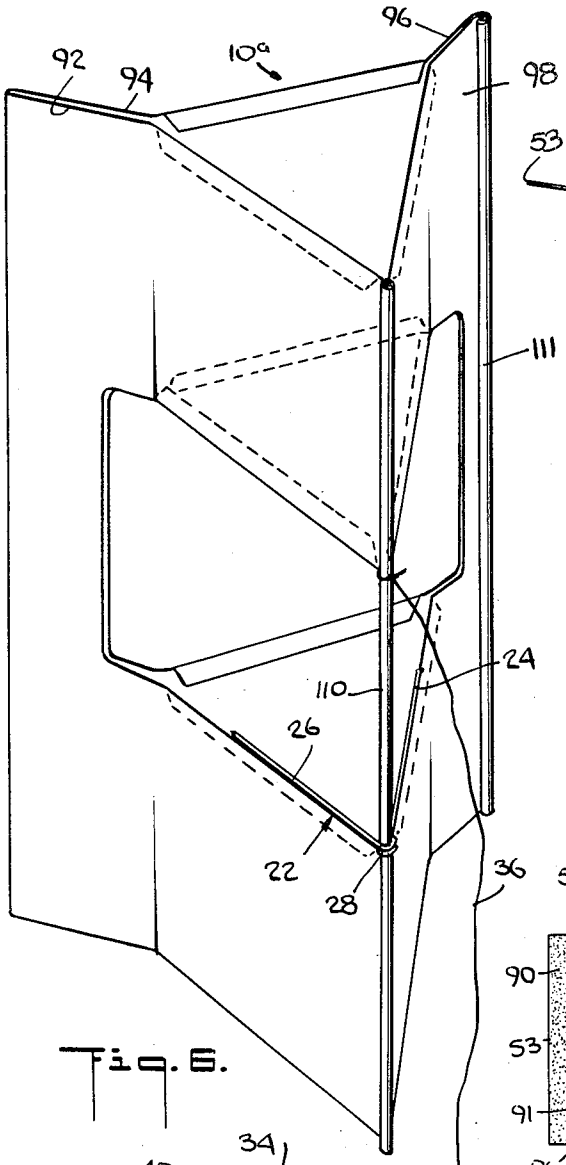


Fig. 6.

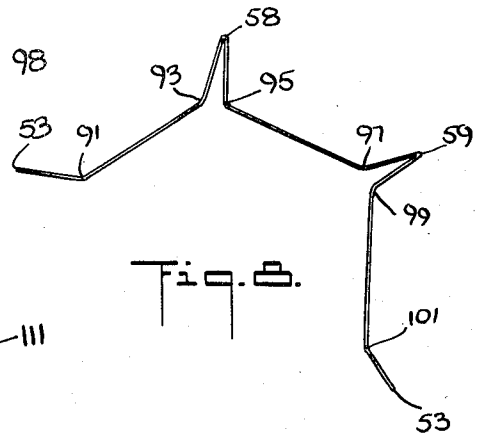


Fig. 8.

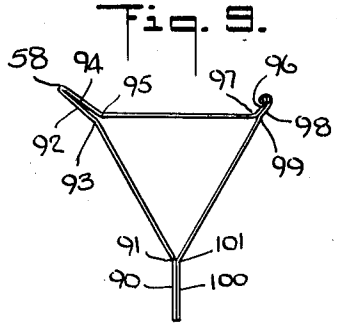


Fig. 9.

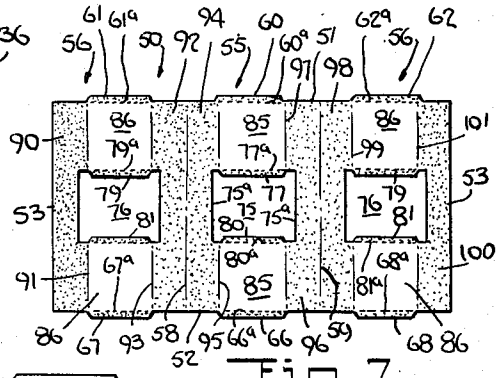
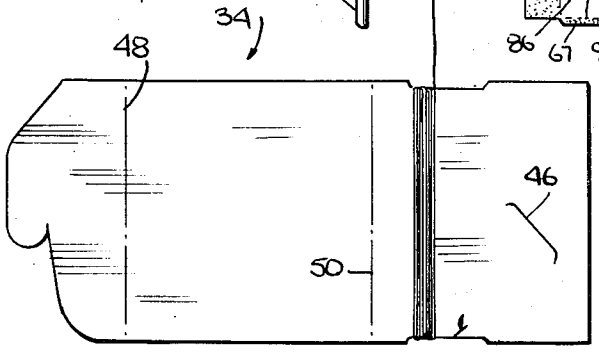


Fig. 7.



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KITE AND KITE PACKAGE

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Application July 21, 1955, Serial No. 523,520

12 Claims. (Cl. 244—153)

This invention relates to kites and particularly to a novel package arrangement therefor.

Most forms of kites in present day use are comparatively complicated to assemble and disassemble. In addition, such kites are not constructed to provide a compact package, readily portable, when the kite is collapsed and not in use.

Accordingly, one object of this invention is to provide a new and package arrangement therefor.

Another object of the invention is to provide an improved kit which is easily assembled and disassembled and which may be folded up into a compact readily portable package.

In general, the principles and objects of the invention are accomplished by the provision of a kite frame comprising a plurality of parallel rods having a plurality of sails secured thereto, adapted to catch the wind and allow the kite to fly. In addition, a spring member is provided in engagement with each of the parallel rods and biased to maintain the kite open and in flying configuration. A removable wrapper is further provided to retain the kite in collapsed condition. This wrapper serves as a spool for the kite string, and also serves to carry a label or advertising.

Yet another object of this invention is to provide a kite of the character described in which the triangular sails and the corner rods are made from a single blank of sheet material such as paper or cardboard.

The invention is described in greater detail by reference to the drawing wherein:

Fig. 1 is a perspective view of a kit embodying the principles of the invention in the open, flying configuration;

Fig. 2 is an elevational view of the kite of Fig. 1 closed and in a portable package form;

Fig. 3 is a plan view of a component part of the kite of Fig. 1;

Fig. 4 is a sectional view along the line 4—4 in Fig. 2;

Fig. 5 is a plan view of the spring wire shown in Fig. 3 when removed from the kite;

Fig. 6 is a perspective view of a kite embodying the invention and illustrating a modified form thereof and shown in partially fabricated condition;

Fig. 7 is a top plan view of blank from which the triangular sails and corner rods are fabricated;

Fig. 8 is a top edge view of said blank in partially folded position; and

Fig. 9 is a view similar to Fig. 8 but illustrating a further step in fabrication of the kite.

Referring to the drawing, a kite **10** embodying the principles of the invention includes a plurality of parallel rods, for example three rods **12**, **14** and **16**, of wood or the like, having a pair of sails **18** and **20** secured thereto and spaced apart a predetermined distance. The sails **18** and **20** may comprise paper, cloth or the like and are glued, nailed or otherwise secured to the rods **12**, **14** and **16**. The strips of material which comprise the sails **18** and **20** are wrapped around the rods to provide three surfaces each against which the wind may blow to lift the kite.

According to the invention, a wire spring **22** is provided for maintaining the desired spatial relationship between the surfaces of the sails when the kite is open and in flying configuration. The spring **22** comprises a length of wire including two legs **24** and **26** of equal length and normally spaced apart at an angle of about 60° whereby the two legs constitute legs of an equilateral triangle. At the vertex of the triangle, the wire **22** includes a coiled portion **28** which provides the desired spring action which maintains the legs **24** and **26** spaced apart. At the ends thereof, the legs **24** and **26** are bent to provide two hooks **30** and **32** which are curved oppositely and away from each other and outwardly from the legs **24** and **26**, respectively.

The wire spring **22** is mounted on the kite **10** with one rod, e. g. rod **16**, extending through the coiled portion **28** thereof and with the bent portions or hooks gripping the rods with the hook **30** gripping the rod **14** and the hook **32** gripping the rod **12**. Since the arms **24** and **26** of the spring **22** are biased to be spaced apart from each other and since the bent hooks are curved away from each other, the spring maintains the kite in the open position with the sails open as shown in Fig. 1. The wire spring **22** may be positioned substantially anywhere along the length of the rods with one convenient position being adjacent to the inner portion of sail **20**.

In addition, according to the invention, a wrapper **34** is provided secured to the kite **10** by a string or rope **36** or the like. The excess string is wound around the wrapper and one end is secured to the kite, for example to one of the rods, for example rod **16**. The wrapper **34** comprises a strip of paper or the like including, in series, a flap **38** having a hook-like process **40**, a flap **42**, and a flap **44** having an angular slot in which the hook **40** is adapted to be inserted. A fold line **48** is provided between the flaps **38** and **42** and a fold line **50** is provided between the flaps **42** and **44**. The kite wrapper **34** has a width which is substantially equal to the spacing between the sails **18** and **20**. The wrapper thus serves as a spool for the kite thread and it may also carry a label or advertising if desired.

When it is desired to fold the kite into a closed package, the legs **24** and **26** of the spring wire **22** are brought together with the sails **18** and **20** folding along one surface thereof so that the rods **12** and **14** are brought together also. The wrapper **34** is then positioned between the sails and is wrapped around the kite with the fold lines **48** and **50** receiving the rods of the kite. The hook-like process **40** is then inserted into the slot **46** in the flap **44** and the package is secured. The wrapper thus also serves as a binder to hold the kite in collapsed condition. When the wrapper is removed, the spring **22** opens up the collapsed kite for flying.

Referring now to Figs. 6 and 9 inclusive, there is shown a kite **10***a* illustrating a modified form of the invention. The kite **10***a* may be made from a blank **50** of paper or cardboard illustrated in Fig. 7 of the drawing. The blank **50** is generally rectangular in shape, having an upper edge **51** and a lower edge **52** parallel thereto. Said blank also has parallel end edges **53** at right angles to the edges **51**, **52**. The blank has greater width than height. It is divided into three similar sections comprising a central section **55** and end sections **56**, by a pair of parallel fold lines **58** and **59**. The fold lines **58** and **59** are parallel to each other and to end edges **53** and are spaced apart the same distance that they are spaced from said edges **53**. Extending upwardly from the upper edge **51** is a central tab **60** and tabs **61**, **62** on opposite sides thereof. The tabs **60**, **61** and **62** are centralized with respect to sections **55** and **56**, respectively. Extending from lower

edge **52** are tabs **66**, **67** and **68** aligned with and symmetrically disposed with respect to the tabs **60**, **61**, **62**, respectively. Said tabs **60**, **61** and **62** are foldable about fold lines **60***a*, **61***a* and **62***a*, respectively, aligned with the edge **51**. The upper faces of the tabs **60**, **61** and **62** are coated with glue and said tabs are folded downwardly about said fold lines and glued to the upper face blank to reinforce the upper edges of sections **55** and **56**.

The tabs **66**, **67** and **68** are foldable about fold lines **66***a*, **67***a* and **68***a* aligned with lower edge **52**. The upper faces of said tabs are coated with glue, and said tabs are foldable about said fold lines against said upper face of said blank to reinforce the lowered edges of sections **55** and **56**.

Said sections **55** and **56** are formed with cut-outs **75** and **76**. Said cut-outs are similar. They are aligned with each other and they are equally spaced apart. Each cut-out is equally spaced from upper and lower edges of the blank. The cut-out **75** is formed with parallel side edges **75***a* equally spaced from the fold lines **58**, **59**. Projecting downwardly from upper end of cut-out **75** is a tab **77**, parallel and coextensive with the tab **60**. Said tab **77** is foldable upwardly about a fold line **77***a*. Its upper face is coated with glue so that it may be folded back and glued to upper face of the blank thereby reinforcing the upper edge of the cut-out.

At the upper edges of the cut-out **76** are tabs **79** coextensive with and symmetrically disposed with respect to the tabs **61**, **62**. Tabs **79** are foldable about fold lines **79***a* aligned with the fold lines **77***a*. Their upper surfaces are coated with glue so that they may be folded upwardly and glued to sections **86** from reinforcing the upper edges of the cut-outs. At the lower edges of the cut-outs **75**, **76** are tabs **80** and **81**, respectively, foldable above fold lines **80***a*, **81***a*, respectively. The upper surfaces of the tabs **80**, **81** are coated with glue so that they may be folded back against the lower sections **85**, **86** for reinforcing the lower edges of the cut-outs.

Between the sections **86** and the left edge **53** is a section **90** extending from the upper to the lower edges of the blank. Said section **90** has its upper surface coated with glue. Between section **90** and the unglued sections **86** are aligned fold lines **91**, aligned with the left ends of the tabs **61**, **67**. Between sections **86** and the fold line **58** is a section **92**, the upper surface of which is coated with glue. Between unglued sections **86** and the glued section **92** is a fold line **93**. Between the fold line **58** and the sections **86**, is a section **94** coated with glue at its upper surface. Between section **94** and sections **85** are aligned fold lines **95** on opposite sides of the cut-out **75**. Between sections **86** of the fold line **59** is a section **98** glued at its upper surface. Between section **98** and sections **96** are fold lines **99**. Between sections **96** and the right edge **53** is a section **100** coated with glue at its upper surface. Between section **100** and the sections **86** are fold lines **101**. It will now be understood that the glued sections **90**, **92**, **94**, **96**, **98** and **100** extend from the upper edge **51** of the blank at its lower edge **52**. It will be further noted that the cut-outs **75**, **76** are wider than the unglued sections **85**, **86**.

After the tabs **60**, **61**, **62**, **66**, **67**, **68**, **77**, **79**, **80** and **81** are folded back and glued in place, the blank is folded about the fold lines **58**, **59**, and section **92** is glued to section **94**. Also, section **96** is glued to section **98**. Furthermore, section **90** is glued to section **100**, and the edges **53** come into registry. The glued together sections **96**, **98** are then rolled from the outer fold line **59** inwardly to the fold lines **97**, **99** to form a corner reinforced rod **111**.

Likewise, the glued together sections **92**, **94** are rolled inwardly from the outer folded edge **58** toward the fold lines **93**, **95** to form another corner rod (not shown). Likewise, the glued together sections **90** and **100** are rolled together inwardly toward the fold lines **91**, **101** to form a corner rod **110**. In Fig. 6 the corner rod **110**

is shown fully rolled. The corner rod for sections **96** and **98** is shown partially rolled and is designated by numeral **111**. The sections **92**, **94** are not shown rolled. It will be understood, however, that all three corners are rolled after gluing to form a kite. The sections **85**, **86** comprise the sails, all the upper sails are spaced from the lower sails by the cut-outs **75**, **76**.

The kite **10***a* may be provided with the opening spring **22**, the same as for the kite **10**. The torsion coil **28** is received about one of the rods (rod **110** in Fig. 6) and the outer ends **30**, **32** engage the other two corner rods. Also, the kite string **36** may be tied to one of the corner rods and provided with a wrapper **34** which is the same as wrapper **34** shown in Fig. 1, said wrapper serving a double purpose; for providing a means for winding the string kite, also for holding the triangular kite in flattened or fully collapsed or folded position for shipping or storing.

It will thus be seen that there is provided an apparatus in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A kite comprising a plurality of parallel rods spaced apart in a predetermined array, a plurality of sails secured to said rods and spaced apart thereon, and a spring wire having a portion in operative engagement with each of said rods and adapted to maintain said rods spaced apart in said predetermined array.

2. A kite comprising a plurality of parallel rods spaced apart in a predetermined array, a plurality of sails secured to said rods and spaced apart thereon, and a spring wire having a pair of arms having hooks at their ends, said hooks being positioned about separate ones of said rods, said wire having a coiled portion positioned about another one of said rods whereby said rods are spaced apart in said predetermined array.

3. A kite comprising a plurality of parallel rods spaced apart in a predetermined array, a pair of sails secured to said rods and spaced apart thereon, and a spring wire secured to said rods, said spring wire comprising a length of wire coiled at one portion and having a pair of legs extending from said coiled portion, said legs having hooks formed at the free ends thereof.

4. A kite comprising a plurality of parallel rods spaced apart in a predetermined array, a pair of sails secured to said rods and spaced apart thereon, and a spring wire, said spring wire comprising a length of wire having a coiled portion positioned about one of said rods, and a pair of legs extending away from said coiled portion and biased apart by said coiled portion, a pair of hooks at the ends of said legs and positioned about others of said rods.

5. A kite comprising a plurality of parallel rods spaced apart in a predetermined array, a pair of sails secured to said rods and spaced apart thereon, and a spring wire, said spring wire comprising a length of wire having a coiled portion, one of said rods being inserted through said coiled portion, said wire including a pair of legs extending from said coiled portion and biased apart thereby, a hook formed at the end of each of said legs, said hooks being turned away from each other and positioned about other of said rods.

6. A collapsible kite comprising a plurality of parallel rods spaced apart in a predetermined array, a pair of sails secured to said rods and spaced apart thereon, and a spring secured to said rods adjacent to one of said sails, said spring including a portion coiled about one of said rods, and a pair of legs each of which has

a hook formed about others of said rods, said coiled portion biasing said legs apart whereby said rods are maintained in said predetermined spacing, a wrapper holding the kite in collapsed condition and a string tied at one end to the kite and being wound on the wrapper.

7. A wrapped package comprising three rods arranged in parallel relationship, a pair of sails secured to said rods and spaced apart thereon, and a spring wire secured to said rods, said sails being folded on one surface whereby two of said rods are positioned closely adjacent to each other, said spring wire comprising a coiled portion formed about one of said rods and a pair of legs secured at their ends to others of said rods, said legs being positioned substantially parallel and closely adjacent to each other, and a wrapper bound around said rods between said sails, said wrapper comprising three flaps, one flap including a hook-like process and another of said flaps including a slot adapted to receive said hook-like process whereby a compact package is provided.

8. A wrapped package comprising three rods arranged in parallel relationship, a pair of sails secured to said rods and spaced apart thereon, a spring wire secured to said rods, said spring wire comprising a coiled portion formed about one of said rods and a pair of legs having hooks at their ends formed about the other of said rods, said coiled portion tending to bias said legs apart, said legs being placed together and side by side whereby one surface of each of said sails is creased and two of said rods are substantially in contact with each other, and a binder around said rods between said sails, said binder including three flaps, one of said flaps having a hook-like process and another of said flaps having a slot adapted to receive said hook-like process whereby a compact package is formed.

9. A kite comprising a single blank of sheet material having parallel corner rods comprising rolled portions of said sheet material and upper and lower sails interconnecting said corner rods, the upper sails being spaced

from the lower sails by cut-outs spanned by said corner rods, said sails each having at their upper and lower ends folded back tabs glued to said sails, in combination with a torsion spring having an intermediate coil portion receiving one of the corner rods therethrough, said spring having arms provided with hook portions at the end of the arms engaging other corner rods for resiliently retaining the kite in opened up position, with all of the sails flat and unfolded, a wrapper wrapped around the kite when a pair of upper and lower sails are folded in half inwardly, and two corner rods are brought together and the kite is collapsed, said wrapper having means to retain the kite in collapsed condition.

10. The combination of claim 9, in combination with a kite string attached at one end to one of the corner rods and being wound about a portion of said wrapper.

11. A generally prismatic shaped kite comprising a plurality of parallel corner rods, each adjacent pair of rods being interconnected by a pair of spaced upper and lower sails, said kite being collapsible by folding one pair of upper and lower sails, bringing together the pair of rods on opposite sides of said pair of folded upper and lower sails, and bringing other sails into substantial contact, and resilient means for opening up the kite from collapsed to fully opened position, in combination with a wrapper wrapped about the collapsed kite and holding the kite in collapsed condition against the tension of said resilient means.

12. The combination of claim 11 in combination with a kite string attached to one of the corner rods and wound about said wrapper.

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