Jan. 5, 1926. 1,568,360

G. W. AYLING

KITE

Filed March 19, 1925 2 Sheets-Sheet 1

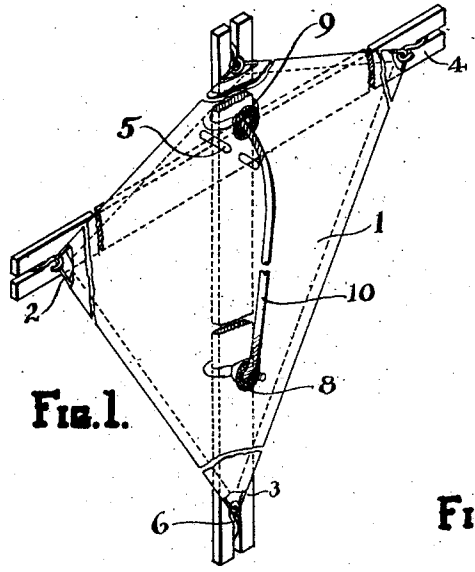


FIG. 1.

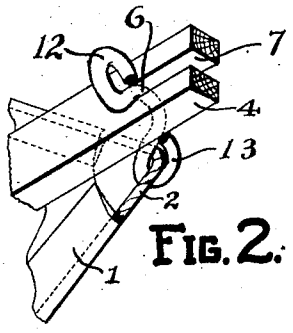


FIG. 2.

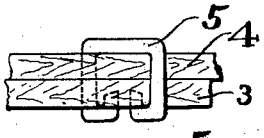


FIG. 5.

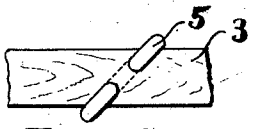


FIG. 4.

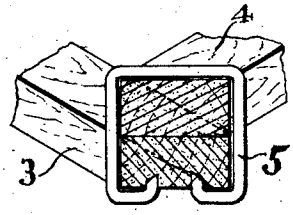


FIG. 3.

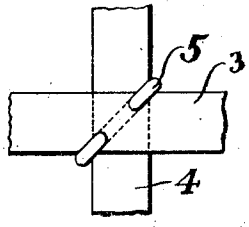


FIG. 7.

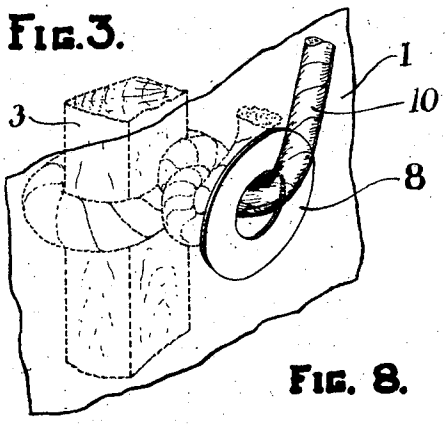


FIG. 8.

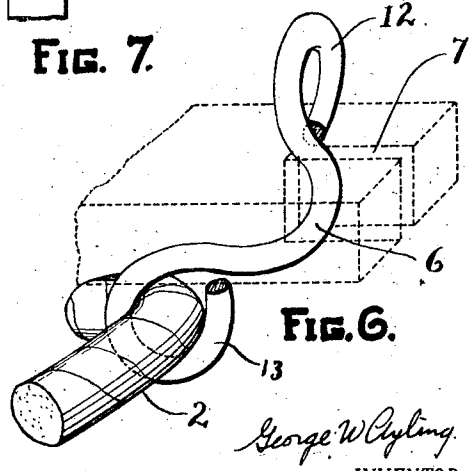


FIG. 6.

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Witnesses:
1. Clarice Stappe
2. John Downing

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G. W. AYLING

KITE

Filed March 19, 1925 2 Sheets-Sheet 2

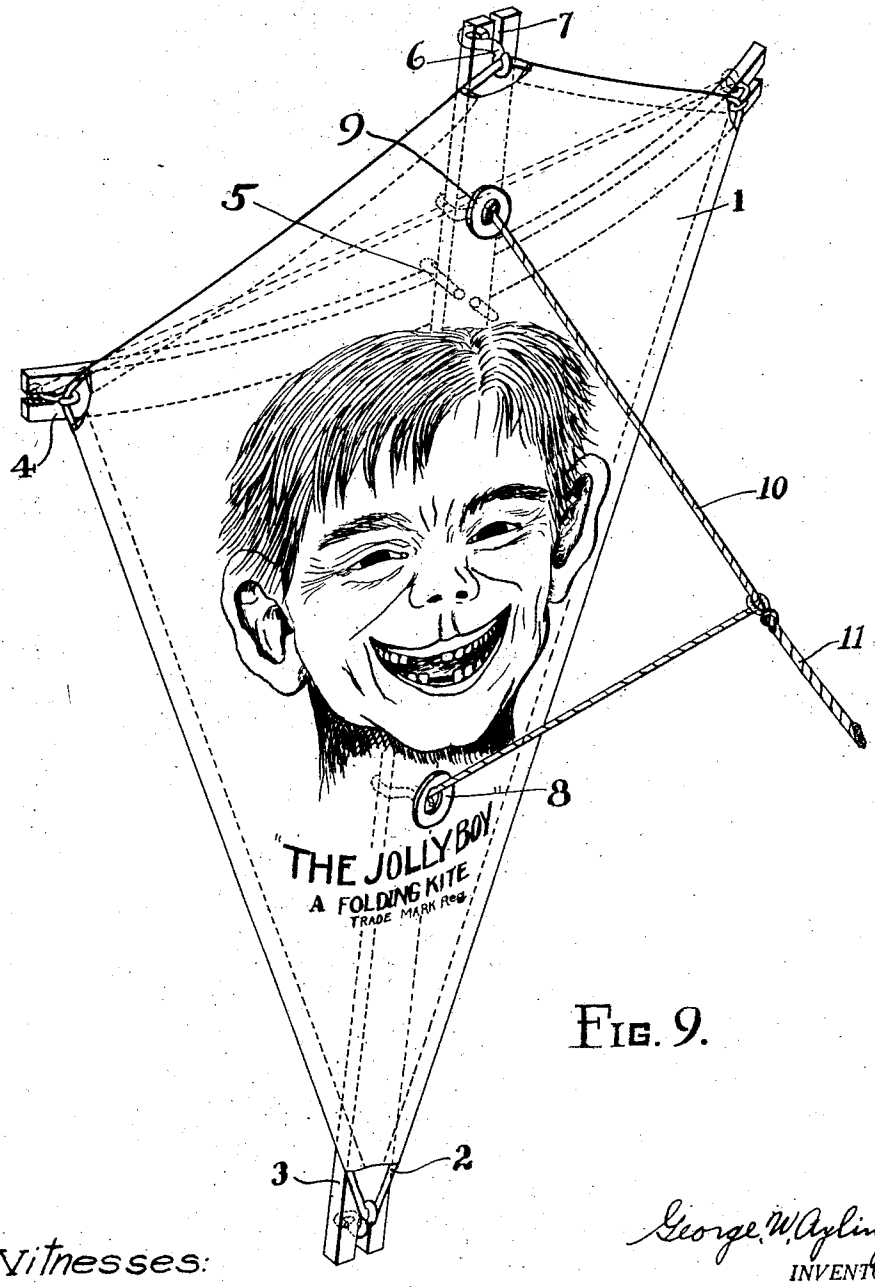


FIG. 9.

Witnesses:
1. Clarice Stappe
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Patented Jan. 5, 1926. 1,568,360

UNITED STATES PATENT OFFICE.

GEORGE W. AYLING, OF SPRINGFIELD, ILLINOIS.

KITE.

Application filed March 19, 1925. Serial No. 16,812.

To all whom it may concern:

Be it known that I, GEORGE W. AYLING, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Kites, of which the following is a specification, reference being had therein to accompanying drawing.

This invention relates to a two stick folding bow kite and has for its principal object the production of a foldable kite which may not only be designed and folded to a small and convenient size when not in use, but which may be economical to manufacture and having provided in its construction, certain details of design which will enable it to be made and marketed, as a very low priced kite.

Another object of this invention is the production of a kite wherein the cross stick may be slidably mounted upon the upright stick and parallel with the same when not in use and be easily swung to an extended position at right angles to the upright stick or frame member when in an assembled position for use.

A particular object in this invention being not only operating convenience but to provide an economical easy and simple means for holding the frame members into slidably operative relation.

Another object of this invention is to improve the kite of the type whose frame members are provided with notches at the ends, by making the body member detachably secured to the frame members, by means of especially designed, economically manufactured, metallic fasteners which may be quickly attached or detached and which has the body member provided with suitably reinforced spaced apertures for the accommodation of the belly band string to provide protection from tearing of the body member.

A further object of my invention is to provide a folding bow kite with the merits above mentioned whose frame members are made operatively slidable by providing a wire clinch staple which can be automatically secured into predetermined position by machinery whereby the staple is automatically encompassed about both frame members, at the same time, from the top as the ends of the clinched staple both automatically turn and are pressed into the bottom surface of the upright frame member, and which staple in the meantime is secured in this manner about the periphery of both frame members at an angle of 45 degrees with a longitudinal center thereof, permitting them to be easily folded into parallelism or swung to an assembled position extended at right-angles for use in flight.

With these and other objects in view, this invention concerns certain improvements in construction in detail of design as will be hereinafter described and claimed in the accompanying drawings.

In the accompanying drawings Fig. 1 is a perspective showing in some detail the specific character of the several features of improvement incorporated in this invention. It will be noted that in this sketch the kite is represented with the corners of the body member and the ends of the frame members cut away in spaced relation with the main portion of the body member which is done to obtain a larger scale for the details in a small space on the drawing.

Figure 2 is a perspective showing the manner in which the wire link fasteners of my invention are adapted to detachably secure the body member to the slotted ends of the frame member.

Figure 3 is a perspective view of the detail manner in which the wire clinch staple of my invention is adapted to encompass both frame members while it is clinched into one side of one frame member only, in which position it is adapted to slidably engage the frame member to which it is not clinched.

Figure 4 shows a bottom view of the two frame members as fastened together in parallelism by the clinch staple holding them together in slidable relation. This view shows how the clinch staple is secured to one frame member at an angle of 45 degrees with a longitudinal center thereof while Figure 5 shows a side elevation of the clinch staple shown in Figure 4 as it encompasses the frame member shown in Figure 4.

Figure 6 is a perspective of an enlarged detail of the wire link fastener shown in Figure 2 but showing in more detail the manner in which the link fastener is made to operate successfully as a very convenient and economical fastening means.

Figure 7 is a detail showing the operating relation of the two frame members and the clinch staple holding them slidably together.

Figure 8 is a perspective showing in enlarged detail how the lower end of the belly band string passes through the reinforced apertures in the body member where it is tied to the upright frame member.

Figure 9 is a perspective showing in substantial detail the kite of my invention in flight. This figure not only shows in detail the several improvements in practical use but it also shows the body member in its detail including the jolly boy face, which is found on all the kites of my invention.

In the paragraphs which follow the reference numerals denote the same detail parts in the several figures.

Numeral —1— indicates the body member normally made of paper of some suitable quality for kite purposes. The body member is provided with a peripheral cord —2— normally encased by the turned edges of the periphery of the body member and left exposed at points suitable for fastening the cord to slot —7— in the ends of the frame members —3— and —4— respectively. In the kite of my invention it will be noticed that the wire link fastener —6— is normally secured to peripheral cord —2— by loop —13— of the fastener, leaving loop —12— to serve as holding means after the body of the fastener —6— normally engages in slot —7—. It will be seen that loop —12— provides a very convenient arrangement for easily removing or attaching the fasteners when assembling or disassembling the kite. In addition to other convenient characteristics of link —6— it provides a very economical fastener for the purpose for which it is used.

Attention is now directed to the specific merits of clinch staple —5— as used in this kite. It being noted for instance, that its merit not only shows the way in which its ends are secured or pressed into the body of frame member —3— and frame member —4— but it is also to be observed that clinch staple —5— is secured into position about the frame member which it encompasses at an angle of 45 degrees with a longitudinal center thereof at the time the frame members are going through the process of manufacture. Attention to the details in Figures —4— —5— —3— and —7— will show very clearly how clinch staple —5— holds frame members —3— and —4— slidably together both when they are positioned in parallelism when not assembled as in Figures —4— and —5— and when the frame members are in their full extended relation as in the assembled kite, details of which relation are shown in Figures —3— and —7—.

It is to be observed that by placing clinch staple —5— at an angle of 45 degrees about the frame members, in which position it fits snugly against the sides of the frame members it enables said clinch staple to fit snugly against both frame members, whether in parallelism as shown in Figure —5— or at right angles to each other as shown in Figure —7—.

When clinch staple —5— therefore, is properly secured to frame member —3—, which is the upright or main frame member of the kite, it at the same time slidably engages the frame member —4— where it thus encompasses both frame members.

A particular advantage of having clinch staple —5— stapled as it is to frame member —3— lies in the fact that it maintains the same position all the time on the frame member —3— as is so designed, as to make it possible to clinch staple —5— to frame member —3— by machinery and save labor by reducing the number of manufacturing operations and consequent cost of production.

It will be interesting to note the unique way in which staple —5— is successfully secured, as it is, to frame member —3— after simultaneously encompassing both frame members without making the staple so tight that it will not permit member —4— to slide therein. This very important result is accomplished in the process of manufacture by providing a jig in the form of a thin sheet of metal which is adapted to rest on top of cross stick —4— during the clinching operation to avoid letting staple —5— become pressed down into the surface of cross stick —4—. After staple —5— is clinched the metallic slip is removed thus leaving sufficient room for frame member —4— to be slidably movable through the clinch staple —5—. Numeral —11— indicates the kite string.

Certain features of improvement in the body member of my kite will be observed as follows: I provide in the body member —1— a pair of spaced apertures in the body member, each suitably disposed in alignment with the body members greatest dimensions which in the meantime is the normal position for the frame member —3—. This pair of spaced apertures is adapted to normally accommodate the ends of the belly band string of the kite when secured to frame member —3—. It will be seen in this connection that the belly band string —10— in itself is an old element and is not claimed as new and to those accustomed to flying kites it will be remembered that it has been a common practice for some time in attaching the belly band string to the main frame member to punch a couple of holes in the body member, at each point of attachment, running the belly string through one hole around the frame member and back through the other hole in the body member where that end of the belly band string is tied snugly against the frame member. In like manner the opposite end of the belly band string had been commonly attached to a posi-

tion on the main frame member far enough from the first position to give suitable balance in holding the kite in flight.

It will be seen that by carelessly punching holes through the body member, as has been heretofore done, through which to tie the belly band string it not only spoils the looks of a nice kite but it also starts places that are easily torn by the wind.

It is with this experience in mind that I am providing an improvement in the body member of the kite of my invention that completely eliminates this difficulty; and this improvement is accomplished not only by providing the two apertures for accommodating the respective ends of the belly band string as they are tied to the main frame member, but more particularly do I accomplish this improvement by reinforcing the two apertures by securing to the body —1— a corresponding pair of circular disc washer units —8— and —9— respectively which are adapted to be so positioned on the body member as to enable them to closely encircle the apertures in the body member through which the belly band string normally extends in maintaining its hold on the positions on the frame member —3— which register with said apertures.

By this arrangement it will be clearly observed that the kite is not only kept in a neat appearance but the ordinary difficulty in tearing the body member with the belly band string when the kite is in flight is completely eliminated.

I do not claim in this application the broad idea of a two stick kite, but to those skilled in the art it will be evident that the improvements herein pointed out are not only novel but are decidedly important in the matter of convenience in handling a folding kite but also in the matter of economy in manufacture which is a decidedly important consideration in putting a low priced article of this kind on the market.

Having thus described the nature of my invention, what I claim is:

1. A folding bow kite of the character described having frame members of unequal length engaged slidably and a body member adapted to be detachably secured by a cord within slots in the terminals of said frame members; a belly band string for holding the kite, a bow string for bowing the kite, a wire clinch loop clinched to and encompassing the longer of the two frame members at an angle of 45 degrees with its length-wise center and sufficiently greater in periphery than the periphery of said longer frame member to enable the same to slidably encompass also the shorter of said frame members known as the cross stick; a pair of reinforcing disc washer units and a pair of spaced round apertures in the body member; said apertures respectively registering with suitable positions on the longer frame member for tying the opposite ends of the belly band string; said reinforcing members secured to the body member in a position to closely encircle said apertures in the body member where they are adapted to protect the body member from tearing; a wire link looped at each end into integral eyelets respectively positioned in vertical planes at right angles to each other and adapted to provide connecting means between the body member and the frame members as described and for the purpose set forth.

2. In a two stick folding bow kite of the character described, having a pair of slidably cooperating frame members of unequal length and slotted ends, and a body member provided with a peripheral cord enclosed partially by the turned edges of the periphery; a wire link looped at each end into integral eyelets respectively positioned in vertical planes at right angles to each other; said link adapted to detachably secure said body member to said slotted terminals of said frame members; a wire loop clinched to and loosely embracing the longer of said frame members at an angle of 45 degrees with the longitudinal center thereof and slidably encompassing the shorter of said frame members so as to permit said frame members to be folded together in parallelism throughout their length when the kite is not assembled and slidably adjusted to an operative position at right angles to each other and there secured in assembled form for use; and a pair of reinforcing disc washer units and a pair of spaced round apertures in the body member; said apertures respectively registering with suitable positions on the longer frame member for tying the opposite ends of the belly band string; said reinforcing members secured to the body member, in registry with and closely encircling said apertures where they are adapted to protect the body member from tearing; as described and for the purpose set forth.

3. In a two stick folding bow kite of the character described having an upright and a cross frame member supporting a body member a clinch loop staple secured to and encompassing the upright and longer frame member and slidably engaging the shorter and cross frame member; means for detachably securing the body member at predetermined points in the periphery thereof normally registering with corresponding ends of said string normally secured by both ends to the upright frame member in spaced positions thereon; said belly band string adapted to extend through a round aperture in the body member of the kite in two locations each registering over the position of the belly band string's respective attachments to said frame member; circular

gummed washer reinforcing units of material tougher than the body member secured to said body member in positions to respectively encircle said apertures in the body member closely; said reinforcements adapted to substantially protect the body member from tearing where the belly band string passes through the same in normally holding the kite in flight.

4. In a kite of the character described the combination with a pair of slidably engaged frame members of unequal length having slotted ends, an encompassing loop clinched about the longer of said frame members and slidably engaging the shorter or cross member, means for detachably securing the face or body member of the kite to said slotted end of the frame members, a belly band string for holding the kite in flight and a bow string for holding the cross frame member substantially in a bowed position in flight, of a pair of spaced round apertures in the body member positioned in upright alignment to register with the two normally spaced tying positions of the belly band string on the longer and upright frame member and a corresponding pair of gummed reinforcing washer units of tougher material than the body member substantially secured thereto in the position to closely encircle said spaced apertures respectively in the body member; said reinforcing washer units adapted to provide substantial protection against tearing the material of the body member about said fastening positions of the belly band string.

5. A folding kite having in combination two frame members of unequal length the shorter of which is adapted to be slidably movable upon the longer and a wire engaging loop encompassing both frame members, clinched about the longer member at an angle of 45 degrees with the longitudinal center thereof and slidably embracing the shorter member; a body member provided with a peripheral cord substantially covered with an integral reinforcing border of the face thereof; said body member further provided with a pair of spaced reinforcing washer discs of a material tougher than that used, in the body member and having centrally disposed holes therein; said discs adapted to be secured to the face in positions registering in alignment with the two spaced positions on the longer frame member suitable for tying the belly band string of the kite; means provided in a plurality of wire link fasteners for holding the peripheral cord in operative position at the respective slotted terminals of the said frame members about the border of the kite face as described and for the purpose set forth.

6. In a folding bow kite of the character described having a body member operatively supported by slidably cooperating cross stick frame members of unequal length and with slots in the ends thereof, a bow cord for bowing the kite, a belly band string for holding the kite in flight, a peripheral cord for the body member partially encased by the reinforcing turned peripheral edge of the body member and means provided in a plurality of wire link fasteners for holding the peripheral cord in operative position at the respective slotted terminals of the said frame members; the combination with said frame members of an encompassing and engaging loop clinched into one side of the longer of said frame members after encompassing the same at an angle of 45 degrees with a longitudinal center thereof; said loop in said position fitting snugly against the edges of the member to which it is clinched but being sufficiently greater in its peripheral dimension above the top side of said frame member to snugly and slidably admit the shorter or cross frame member in the loop space thus formed by which holding means said cross frame member may be slidably and snugly moved into parallelism with the longer and upright member to which it is attached when not assembled or slidably moved and secured into a position operatively at right angles to said longer and upright frame member when the kite is full assembled; and a pair of spaced round apertures in the body member adapted to accommodate the belly band string of the kite and register with the tying positions of the same along the upright and longer frame member and a corresponding pair of reinforcing washer units of tougher material than the body member substantially secured thereto in the position to closely encircle said spaced apertures respectively in the body member; said reinforcing washer units adapted to provide substantial protection against tearing the material of the body member about said fastening positions of the belly band string.

7. In a folding bow kite having two cross frame members slidably held together by a wire clinch loop clinched to one side of one of said frame members after slidably encompassing both, a body member provided with peripheral cord inclosed by turned integral reinforcing edges of the periphery of the body; said cord exposed at four points on the periphery of the body member at points positioned in opposite pairs at opposite apices of the body member terminating at respective ends of the body's two greatest dimensions; said peripheral cord provided with a wire link looped at each end into integral eyelets respectively positioned in planes at right angles to each other; said link bent midway between the eyelets at approximately right angles, one of said eyelets adapted to hold the peripheral cord and the other of said eyelets

adapted to provide holding means for detachably securing said body member to the corresponding end slots of said frame members; said body member further provided with a pair of spaced round apertures positioned in alignment with its greatest dimensions; said body member protected further with substantial reinforcing washer units closely encircling said apertures and secured to the body; said reinforcing washer units of tougher material than the body material; a bow cord for holding the kite in bowed position when in flight, a belly band cord for holding the kite in flight and adapted to be normally passed through the apertures in said body member and tied at the opposite ends at spaced positions along the length of the upright frame member normally registering respectively with said apertures in the body member, as described and for the purpose set forth.

In witness whereof I hereunto set my hand this 6th day of March, 1925.

GEORGE W. AYLING.