

# PATENT SPECIFICATION



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261,877

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## PROVISIONAL SPECIFICATION.

No. 24,000, A.D. 1925.

### Improvements in Kites.

We, WALTER BURNETT BROOKE, 9A, Mill Hill Grove, Acton, W. 3 (British), and THOMAS BRIGHT BROOKE, 9A, Mill Hill Grove, Acton, W. 3 (British), do hereby declare the nature of this invention to be as follows:—

This invention relates to a means of stiffening the wings or planes of kites, particularly the triangular box wing type, which is used for carrying wireless aerials, etc.

The object of the invention is to stiffen the wings or planes of the kites giving greater strength to the bow stretcher and thereby enabling the kite to be flown, in very strong winds with safety, and also providing a rapid means of assembling and dismantling the kite.

Of the accompanying drawings Fig. 1 represents a view of the kite looking down at the top in flight, and Fig. 2 shows the front of the kite in elevation. According to this invention the kite as shown in the drawing is fitted across the wings or planes *a* with a bow stretcher *b*, which

fits into sockets or the like *c* formed in or affixed on to the binding or material at the tips of the wings or planes.

The bow stretcher *b* is kept in position at *d* by means of lugs or cleats *e* or other convenient method fixed on the upright stretchers *f* which form the top side of the triangular box of the kite.

In the centre of the bow stretcher is a bow string lever *g* which may be fitted into a metal or other similar socket fixed on or formed in the bow stretcher at *d*.

From a suitable position at the end of the bow stretcher, farthest from the bow are fixed stays or bracing members *h* formed of cord wire or other suitable material radiating to positions on the bow, and (or) the upright stretchers before mentioned, thus taking the stress on the bow and preventing breakage of the bow during flight.

Dated this 24th day of September, 1925.

W. BURNETT BROOKE.  
THOS. B. BROOKE.

## PROVISIONAL SPECIFICATION.

No. 403, A.D. 1926.

### Improvements in Kites.

We, WALTER BURNETT BROOKE and THOMAS BRIGHT BROOKE, both British subjects, of 9A, Mill Hill Grove, Acton, London, W. 3, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements

[Price 1/-]

in kites and has for its object to provide means whereby the kite is readily adapted for use in strong or light winds.

The kite is of the kind having a plain portion provided with side wings and these, according to the present invention, are provided with means whereby they

can be fixed at any of a desired number of inclinations to the plain portion of the kite.

5 The plain portion of the kite may be the upper member of a box kite, and is provided at its edges with longitudinal stretchers which hold together at a suitable distance apart the two box members of the kite in the usual manner. The box members of the kite are preferably of the inverted triangular cross section kind, connected at their apices by a third stretcher to which is affixed the flying cords and tackle. The ends of the stretchers may be arranged to fit in pockets in the flexible fabric of the kite in the usual manner.

10 The side wings are of triangular or similar shape having their base portions adjacent the two main stretchers of the kite and across the kite extending into pockets at the apices of these wings is detachably secured a bow stretcher constructed of three portions hinged together, the central portion extending the full width of the upper plane of the box members and carries at its centre a detachable strut member arranged to form the tensioning member of a cord anchored at its ends respectively to the outer hinged members of the bow stretcher at convenient positions thereon, the hinges of the bow stretcher sections being of the kind that open away from the tensioning tie.

15 The hinged members of the bow stretcher are formed with stops or inclined abutting ends designed to hold the wings at the desired angle to the box members of the kite and in order that such angle may be varied to suit light or strong winds adjustable stops are provided. These stops may consist of a plug member hinged to hinged members of the bow stretcher in such positions that they can be turned about their hinges to positions in which they will lie between the hinged abutting ends of the bow stretcher, and to ensure them being retained in such position they may be provided with a

ridge adapted to enter a groove formed in the abutting end of the adjacent member of the bow stretcher. Two or more of such plug members of different thicknesses may be provided according to the number of different inclined positions of the wings desired, the tie member being provided with corresponding loops arranged so that the one corresponding to the plug in use can be connected to a hook or like fastening forming the anchoring member of the tie.

The bow stretcher is arranged near the lower end of the upper box member of the kite, and a stiffening stretcher is arranged across the lower box member of the kite its ends fitting in pockets in the wings of the kite in the usual manner.

The central member of the upper bow stretcher is held in position on the box stretchers by lugs or cleats or other suitable fastenings such as strips of fabric or leather secured at their central portion to box stretchers and having end portions adapted to fold over the bow stretcher and their ends connected together by lacing or in any other suitable manner.

The hinges of the bow stretcher when the detachable strut and tie are disconnected enable the wings to be folded over the box portion of the kite for transporting purposes, or when more complete disassembling is required the stretchers may be pulled out of their pockets in the fabric of the kite.

The above device enables the wings to be readily fixed at the desired angle to the box member of the kite according to the strength of the wind at the time of using the kite, and such kites are particularly applicable for carrying wireless aerials.

Dated this 6th day of January, 1926.

A. A. THORNTON,  
Chartered Patent Agent,  
Quality Court, Chancery Lane, London,  
W.C. 2,  
For the Applicants.

## COMPLETE SPECIFICATION.

### Improvements in Kites.

100 We, WALTER BURNETT BROOKE and THOMAS BRIGHT BROOKE, both British subjects, of 9A, Mill Hill Grove, Acton, London, W. 3, do hereby declare the nature of this invention and in what manner the same is to be performed, to be

particularly described and ascertained in and by the following statement:—

The invention relates to improvements in kites and has for its object to provide a kite adapted for use in strong or light winds.

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Broadly considered the invention comprises a kite having a body member provided with laterally disposed wing members attached to its sides or edges, characterised by the provision thereon of a bow-like member extending transversely across the wing members so that its opposite ends engage the outer edges of the wing members and whereby the wing members can be fixed at an angular or bowed relation to the body member.

The invention is particularly applicable to the type of kite known as triangular box wing kites which are used for carrying wireless aerials and the like and will be described in that connection although as will be readily understood, the invention may be employed in connection with kites other than box kites.

The body portion of the kite above referred to may be the upper member of such box kite and said body is provided at its edges with longitudinal stretchers which hold together at a suitable distance apart the two box members of the kite in the usual manner.

The box members of the kite are preferably of the inverted triangular cross section kind connected at their apices by a third stretcher to which is fixed the flying cords and tackle. It will however be understood that such box member might be of rectangular or any other suitable section.

The side wings are of triangular or other suitable shape having their base portions adjacent or parallel and connected with the two main longitudinal stretchers of the body portion of the kite and across the kite extending into pockets at the apices or widest part of these wings is detachably secured a bow-like stretcher.

Means are provided for deflecting the said bow-like stretcher and securing the same in such manner as to fix the wing members in angular or bowed relation to the body member of the kite, and also for stiffening the various members thereof so that the kite may be flown in very strong winds with safety.

The invention will now be more fully described with reference to the accompanying drawings in which

Figure 1 is a plan of a kite constructed according to the present invention.

Figure 2 is an end elevation thereof.

Figure 3 is a similar view to Figure 1 illustrating a modification.

Figure 4 is an end elevation thereof.

Figure 5 is an elevation of the bow-like stretcher separately part thereof being broken away and

Figure 6 is a plan thereof.

Referring to Figures 1 and 2 of the

drawings, 4 represents the main or body portion of the kite which in the example shown is the upper member of a box kite and is provided at its edges with longitudinal stretchers 5 which hold together at a suitable distance apart the two box members 6 of the kite in the usual manner.

The box members 6 of the kite are as shown in Figure 2 of the inverted triangular cross section kind, although they may be of any other suitable section, and are connected at their apices by a third longitudinal stretcher 7 to which is affixed the usual flying cords and tackle. The ends of the various stretchers may be arranged to fit in pockets in the flexible fabric of the kite in the usual manner.

8 represents the side wings of the kite which in the example shown are of triangular shape, but they might be of other suitable shape, and they have their base portions adjacent and connected with the two main longitudinal stretchers 5.

Across the kite and extending into pockets 9 at the apices or widest parts of the wings 8 is detachably secured a bow-like stretcher 10 which is held in position against the longitudinal stretchers 5 by means of lugs or cleats 11, or other convenient means fixed upon the longitudinal stretchers 5, or otherwise.

In the centre of the bow-like stretcher 10 is formed or affixed a socket 12 which may be countersunk or formed of metal or other suitable material and into this socket 12 is fitted a strut or lever 13.

Extending from the strut or lever 13 to suitable positions on the bow-like stretcher and the longitudinal stretchers 5 are arranged tie or bracing members 14 which may be formed of cord, wire or other suitable material which take the stress on the bow-like stretcher and prevent breakage thereof during flight. The said tie members 14 may, if desired, be provided with means for tightening or slackening the same. By tightening or slackening the tie members 14 connecting the strut or lever 13 with the bow-like stretcher 10 the curvature of said bow-like stretcher and therefore the angle of the wings 8 relatively to the body 4 of the kite may be varied at will in order to adapt the kite for light or strong winds and in strong winds said tie members furnish the bow-like stretcher of the kite with considerable additional strength.

In the example given at Figures 3 to 6 is illustrated a modification in the construction of the kite, described with respect to the previous figures.

In this case the bow-like stretcher 10

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is constructed in three portions or sections 10, 10a and 10b the sections 10a and 10b being hinged to the central portion 10 by means of suitable hinges and the abutting ends of each portion being cut to suitable angles for the purpose hereinafter described.

The central portion 10 of the bow-like stretcher which extends the full width of the plain part or body of the kite carries at its centre a projection 12 and in the strut or lever 13 is formed a socket which fits upon the projection 12 of the bow-like stretcher 10 or the reverse arrangement might be adopted as hereinbefore described and in this example the strut 13 forms the tensioning member of a cord 14 anchored at its ends respectively to the outer hinged members 10a and 10b of the bow-like stretcher 10 at convenient positions thereon as shown. The hinges of the bow-like stretcher sections 10a and 10b are of the kind that open away from the strut or lever 13.

The hinged members 10a and 10b of the bow-like stretcher 10 are formed with inclined abutting ends as shown, or they might have stops affixed to or formed thereon, designed to hold the wings 8 at the desired angle to the body member 4 and box members 6 of the kite and in order that such angle may be varied to suit light or strong winds adjustable stops, plugs or wedges or other suitable means are provided.

These stops according to the example shown consist of a plug or wedge member 15 preferably pivotally carried by a frame or fitting 16 hinged or pivotally mounted upon the members or sections 10a and 10b of the bow-like stretcher 10 as shown at 17 and they are arranged in such positions that they can be turned about their hinges or pivots into such positions that they will lie between the hinged abutting ends of the several sections 10, 10a and 10b of the bow-like stretcher. To ensure that the plug or wedge members 15 are retained in position between the sections 10, 10a, 10b of the bow-like stretcher they are each provided with a ridge or projection 18 and the abutting ends of said sections are furnished with grooves or recesses 19 which the said ridges or projections are adapted to enter or other means may be provided for retaining said plug or wedge members 16 in position between the abutting ends of the sections 10, 10a, 10b of the bow-like stretcher. Two or more of such plug or wedge members of different thicknesses may be provided according to the number of different inclined positions of the wings desired, the tie member being provided with corresponding loops or other means which may

be provided with means for varying the length of said tie member said loops being arranged so that the one corresponding to the plug in use can be connected to a hook or like fastening forming the anchoring member of the tie.

The bow-like stretcher 10 extends between the tips of the wings 8 of the kite near the nose thereof and in order to further stiffen the kite a stretcher 20 is arranged across the tail thereof said stretcher at its ends fitting into pockets in the wings in the well known manner.

The central member 10 of the bow-like stretcher is held in position on the longitudinal stretchers 5 by means of lugs or cleats hereinbefore referred to, or by other suitable fastenings such as strips of fabric or leather 11 secured at their central portion to the longitudinal stretchers 5 and having end portions adapted to fold over the bow-like stretcher 10 and at their ends connected together by lacing 11a as illustrated in Figures 3 and 4.

The hinges of the bow-like stretcher 10, when the detachable lever or strut 13 and tie 14 are disconnected and the tail stretcher 20 is removed from its pockets enable the wings 8 to be folded over the box portion 4 of the kite for transport purposes, or when more complete dismantling is required the stretchers 10 and 20 may be pulled out of their pockets in the fabric of the kite which may then be wrapped around the stretchers 5 and 7 as will be readily understood.

By the means hereinbefore described the wings 8 of a kite can be readily fixed at the desired predetermined angle to the main or body member 4 thereof according to the strength of the wind at the time of using the kite, the kite is strengthened by the tie members hereinbefore described and the kite is rendered particularly applicable for carrying wireless aerials.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A kite having a body member provided with laterally disposed wing members attached to its sides or edges, characterised by the provision thereon of a bow-like member extending transversely across the wing members so that its opposite ends engage the outer edges of the wing members and whereby the wing members can be fixed at an angular or bowed relation to the body member.

2. A kite according to Claim 1 wherein the means for fixing the wing members

in angular or bowed relation to the body member are adjustable.

3. A kite according to Claim 1 wherein the bow-like member is provided with a strut member for carrying or supporting a flexible tie member or members whereby the wing members are fixed in the desired bowed position substantially as herein set forth.

4. In a kite, a body member having longitudinal stretchers at its edges, wing members extending laterally from said longitudinal stretchers a curvable bow-like member extending between the tips of said wing members, a strut or lever carried by said bow-like member, stiffening cords or the like connecting said strut with the bow-like member and said longitudinal stretchers and means for varying the angle of said wing members.

5. In a kite, a body member having longitudinal stretchers at its edges, wing members extending laterally from said longitudinal stretchers a curvable bow-like stretcher extending between the tips of said wing members, means for varying the curvature of said bow-like stretcher and wing members and means for stiffening said bow-like stretcher.

6. In a kite according to the preceding claims, means for varying the angle of the wings comprising a curvable bow-like stretcher extending between the tips of the wings, a strut member carried by said bow-like stretcher and tie members connecting said strut with the bow-like stretcher and with the longitudinal stretchers of the body and means for adjusting the length of said tie members.

7. In a kite a bow-like stretcher formed in three sections the outer ends of the end sections being attached to the tips of the wings of the kite and the inner ends being hinged to the central section and means for rigidly fixing said outer sections at a predetermined angle or angles with the central section.

8. In a kite as claimed in Claim 1 a bow like stretcher formed in three sections the outer ends of the end sections being attached to the tips of the wings and at their inner ends being joined or hinged to the central section by means of hinges opening away from the strut the abutting ends being formed at suitable angles a strut member carried by the central section, a tie member passing through said strut member and at its ends fixed to the end sections of the bow-like stretcher, and means for varying the angle of said end sections.

9. In a kite as claimed in Claims 1, 5 and 6 means for varying the angles of the abutting ends of the sections of the bow-like stretcher comprising plugs wedges or the like carried by arms or frames pivotally connected with said sections and adapted to be inserted between said abutting ends and means for preventing the dislodging of said plugs, wedges or the like.

10. In means for varying the angles of the abutting ends of a sectional bow-like stretcher for a kite as claimed in the preceding claim, two or more plugs, wedges or the like of different thicknesses connected by means of pivotal arms to the sections and adapted to be inserted one or more at a time between said abutting ends and means preventing the dislodgment of said plugs wedges or the like.

11. The improved kite constructed in the manner herein described and illustrated in the accompanying drawings.

Dated this 18th day of June, 1926.

A. A. THORNTON,  
Chartered Patent Agent,  
8, Quality Court, Chancery Lane, London,  
W.C. 2,  
For the Applicants.

[This Drawing is a reproduction of the Original on a reduced scale.]

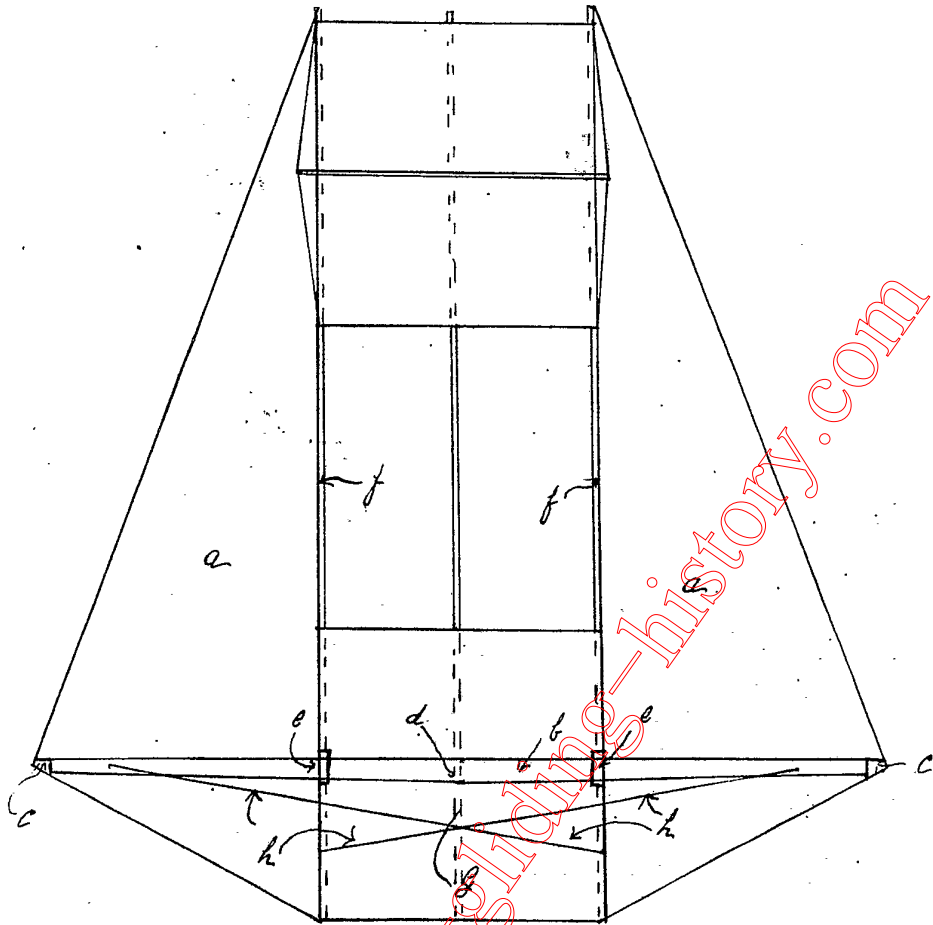


FIG. 1.

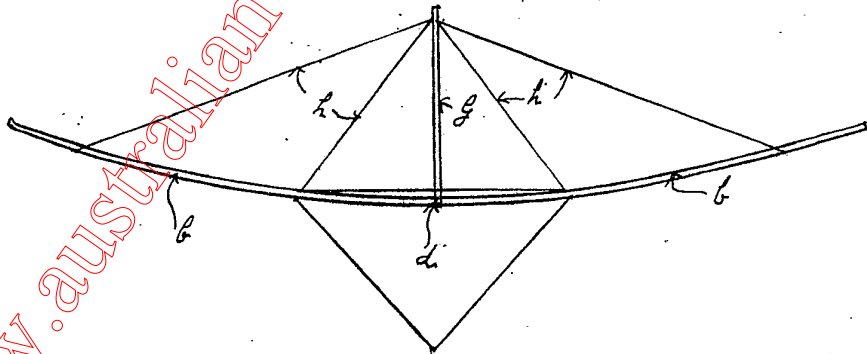


FIG. 2.

[This Drawing is a reproduction of the Original on a reduced scale.]

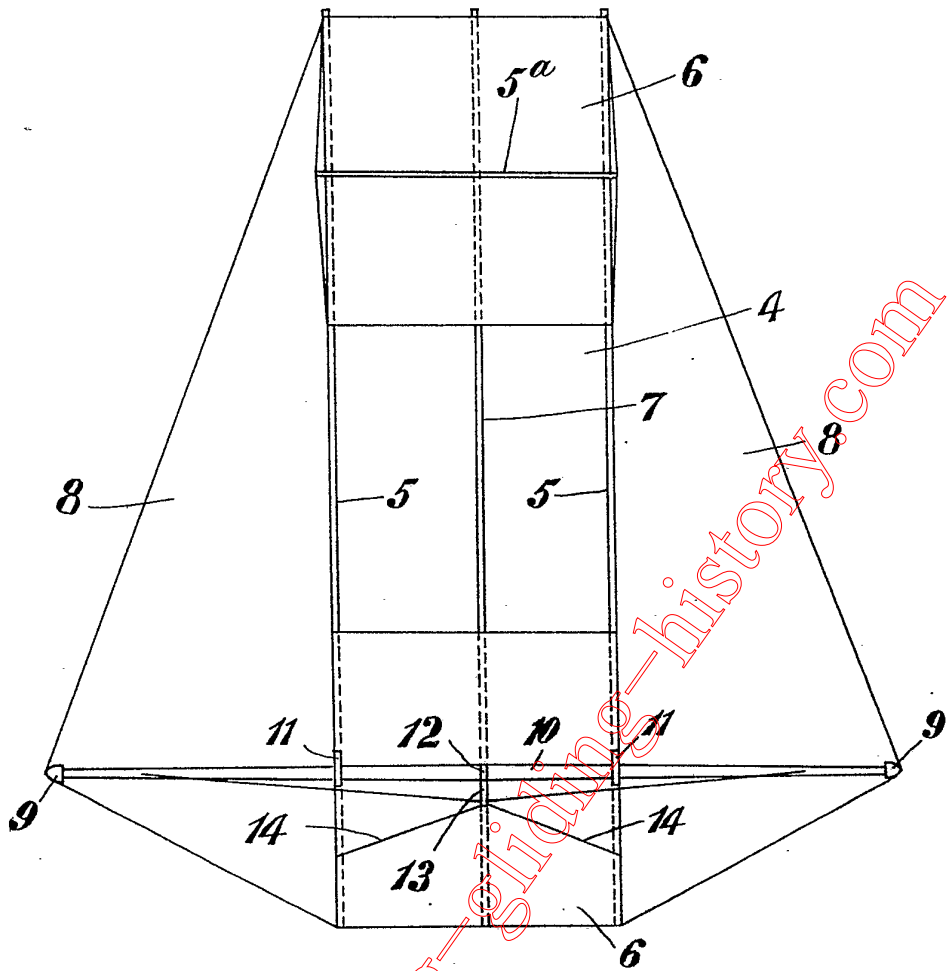


Fig. 1.

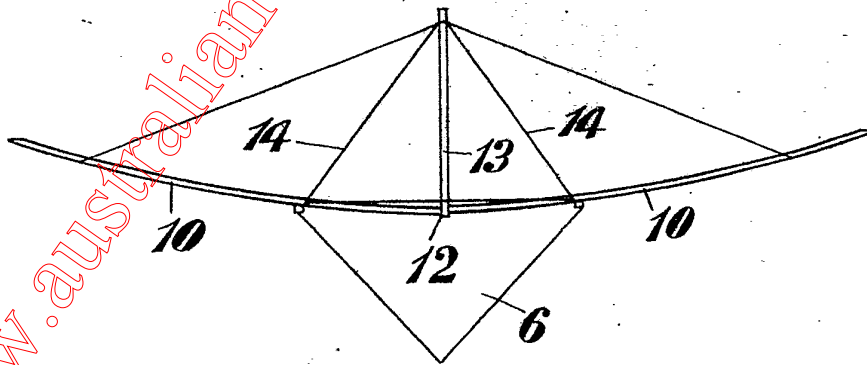
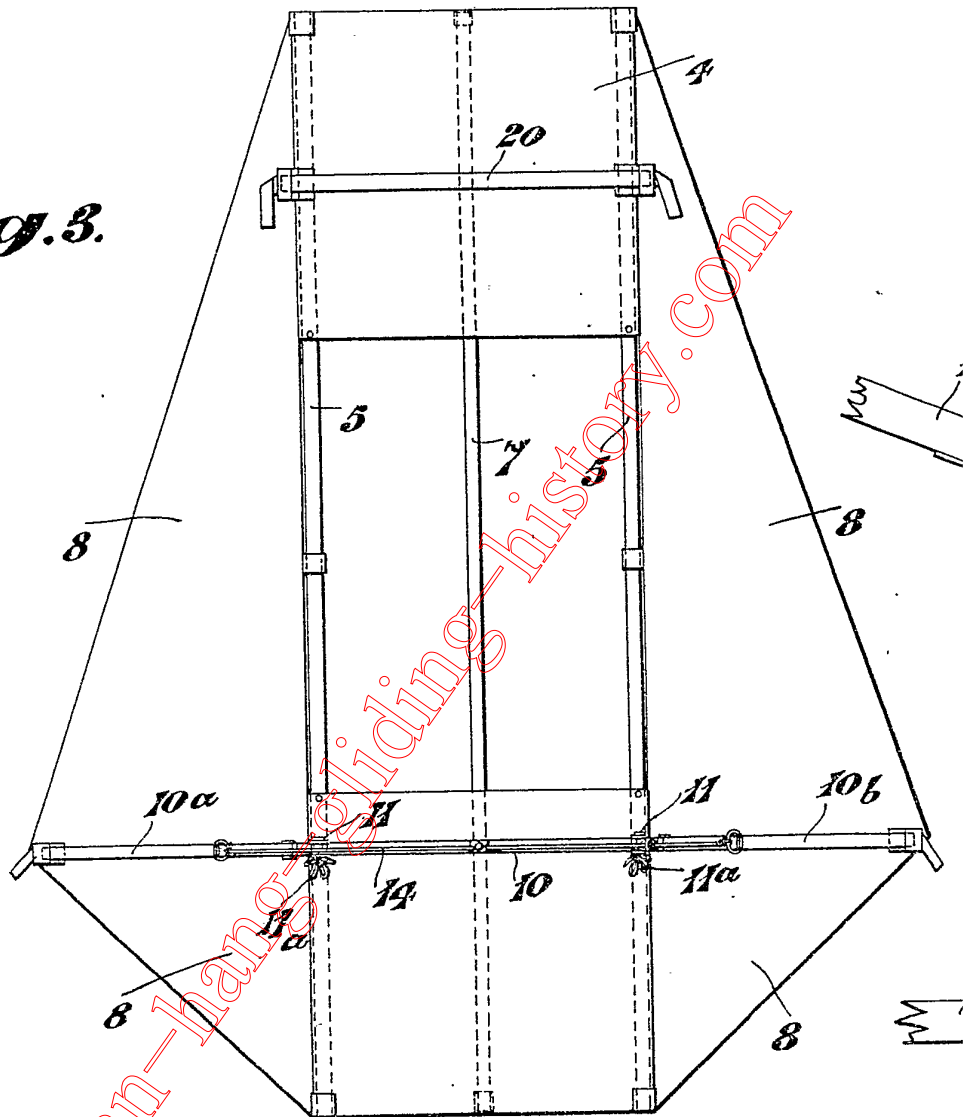


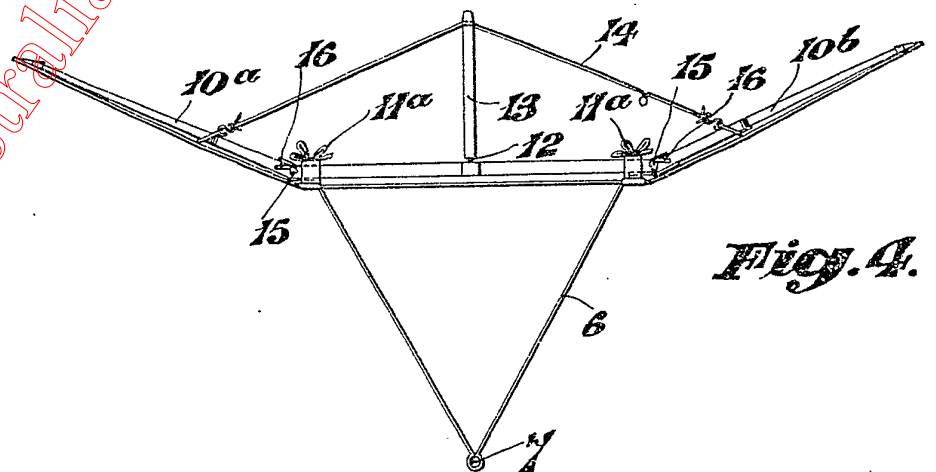
Fig. 2.

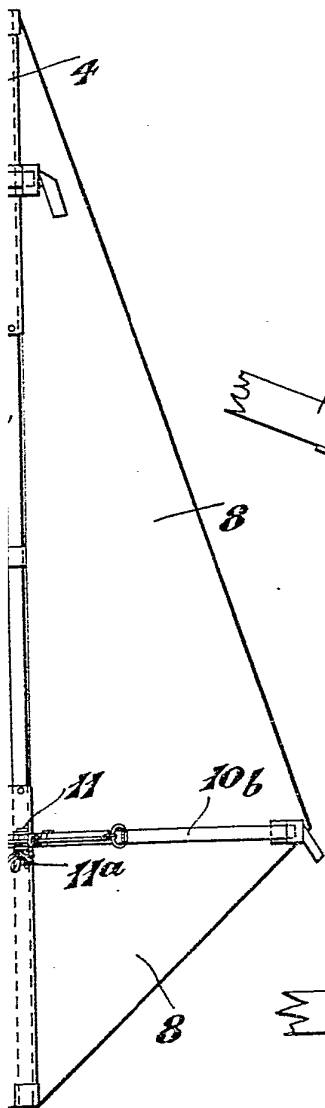
**Fig. 3.**



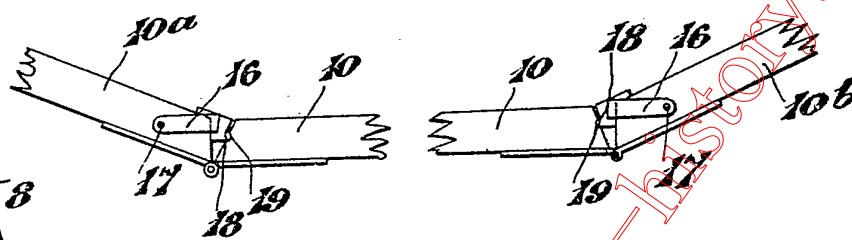
[This Drawing is a reproduction of the Original on a reduced scale.]

**Fig. 4.**

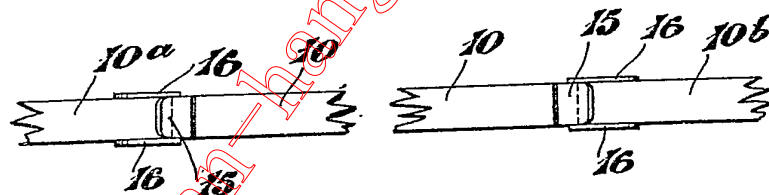




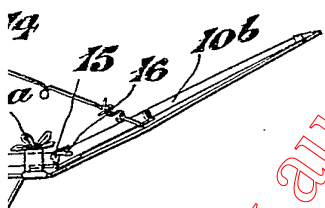
*Fig. 4.*



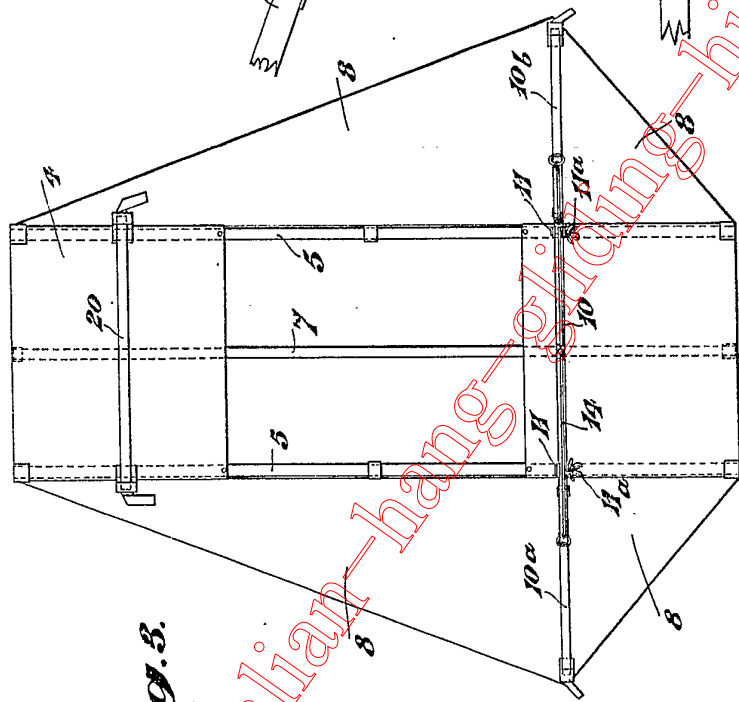
*Fig. 5.*



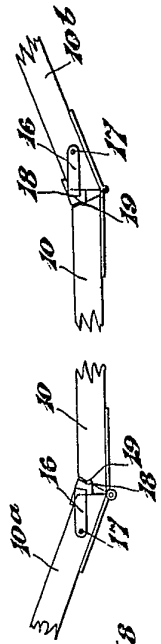
*Fig. 6.*



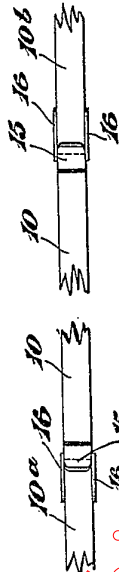
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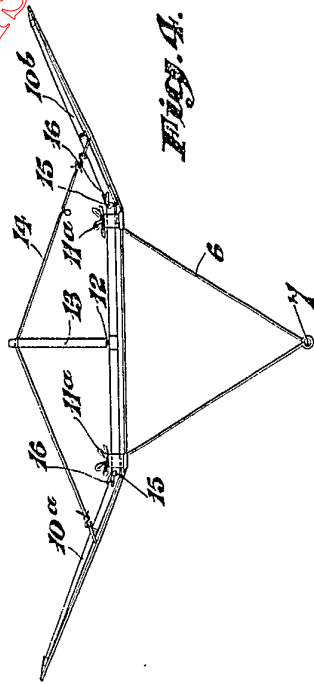
**Fig. 3.**



**Fig. 5.**



**Fig. 6.**



**Fig. 4.**

[This Drawing is a reproduction of the Original on a reduced scale]

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