

N^o 23,566



A.D. 1901

Date of Application, 20th Nov., 1901

Complete Specification Left, 20th Aug., 1902—Accepted, 20th Nov., 1902

PROVISIONAL SPECIFICATION.

Improvements in Kites and Apparatus for the same

I, SAMUEL FRANKLIN CODY, of Theatre Royal, Stratford, E, Dramatist, do hereby declare the nature of this invention to be as follows—

This invention relates to improvements in the construction and arrangement of kites to be used for aerial flights, the object of the invention being to provide
5 a means for enabling kites to ascend and travel with a greater weight than is possible with the ordinary method of construction, and to enable such kites to be advantageously used for military and other observation purposes in positions where my improved system of construction enables the kite to be readily collapsed, carried and re-erected for use. My invention also has reference to the improved
10 mechanical arrangements for controlling the movement of the kite and for regulating the speed of its ascent or descent by means of the improved brake or retarding device which I arrange in connection with the kite winch or mechanism for winding the cord or cable of the kite.

In carrying my invention into effect I employ a series of kites of varied and
15 increasing size and power preferably arranging the initial kite as a pilot or initiatory apparatus to raise the first kite of the series from the ground, I connect to the pilot kite a cord which I carry to a double or frame like arrangement on to which cord frame I secure the series of kites to be employed for any particular purpose.

I make my kites to be employed in a series upon one carrying cord frame of a
20 box like form having open ends, and I make each kite preferably in the form of two of such boxes like frames. Each of the pair of kites thus united together to form one kite I make with an open space or connecting lattice like division between and I make such open work dividing space to serve as the space for
25 carrying my lacing or tightening cords arranged in the manner of the ordinary drum head tightening system so as to ensure a ready means for keeping the material of the end boxes taut when in position. I construct the frames upon which the canvas or other like material is mounted to form the open ended box like carriers of hickory or other suitable flexible and rigid material, and I carry
30 cross-stays or diagonal tightening members from one of the corner carrying members to the other and I cause the end tightening members thus formed to be held in position by means of sling like cords passing from one to the other, such cords or interior tightening members being arranged preferably in pulley block form that is, with one cord passing over and around two or more pulley like
35 surfaces so as to enable a purchase to be obtained when the free end of the cord is pulled by hand. By this arrangement of interior cord attachment I am enabled to extend the diagonal members so as to obtain any desired degree of tension upon the four frame like supports when such are in position. The longitudinal extension of the fabric covering the frame being effected by means of my
40 drum head arrangement of adjustment of the interlacing cords running from one surface to the other of the pair of box like kites attached to the one frame.

My improved skeleton and adjustably mounted frames which I construct as one kite formed by two separate end covered portions with an open or central lacing division between. I provide with an extending boom like member having

Cody's Improvements in Kites and Apparatus for the same.

rollers or pulleys upon its projecting ends for enabling it to be carried upon the main cord frame to which the other kites are to be secured in like manner, my kites are thus attached by means of one end of the cord frame and are free to move upon that end as a centre so as to occupy more or less inclined position when in flight. From another portion of the framework of my duplex box kite I carry a sustaining or connecting cord or cable, to the cradle or basket to contain the aeronaut; arranging as many cords or series of cords to support the basket or car as there are kites attached to the frame. To alter the position or angle of flight of the larger or lower kite of my series I arrange cords which pass from the end or near the end of the box casing so that the aeronaut in the car can move or alter the position of the lower kite by pulling or releasing such cord so as to ascend or descend at will and for the purpose of enabling a steering effect to be obtained I carry independent cords from the sides of my lower attaching boom member of the lower kite which the operator or aeronaut can pull so as to vary the horizontal position of the kite to suit the direction in which he wishes to be carried.

I connect the cable or main cord which is secured to the end of the cord frame carrying the kites, to a winch provided with a barrel or the like for such cable to be wound upon. I mount upon such winch spindle a brake in the form of a series of washers of metal, leather or other suitable material threaded upon a bent core like bar one end of which bar is secured to the frame work of the winch while the other end is secured to a moving lever serving as the brake lever for tightening or releasing the grip of such washer like brake band upon the surface of the brake wheel or member. I prefer to arrange my chain like brake surface with a continuous series of washers although I sometimes employ washers alternately with rollers or blocks placed between such washers.

I mount the winding barrel or winch mechanism upon a carriage preferably in the form of a gun carriage having a trail, the other end of which is provided with one or more fork like members for engaging with the ground, in such a manner that when tension or pull is given to the barrel the trail is caused to engage with the ground and thus to be held in position.

I modify the form of my winding mechanism and the method of connecting the same to the portable carriage to suit the purpose for which my improved kites are to be employed and I vary the number and arrangement of my combination box kites to suit the weight that is to be carried, the position in which such is to be used and the purpose for which the kite is required, making the members of such a form that they can be readily collapsed and carried from one position to another when required for field purposes or made as rigid frames when my improved kites are to be used for stationary observation or advertisement purposes.

Dated this 20th day of November 1901.

MARKS & CLERK,
18, Southampton Buildings, London, W.C.
13, Temple Street, Birmingham, and
25, Cross Street, Manchester,
Agents.

COMPLETE SPECIFICATION.

Improvements in Kites and Apparatus for the same

I, SAMUEL FRANKLIN CODY, of The Theatre Royal, Stratford, E, Dramatist, do hereby declare the nature of this invention and in what manner the same is

Cody's Improvements in Kites and Apparatus for the same.

to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in the construction and arrangement of kites to be used for aerial flights, the object of the invention being to provide
 5 means for enabling kites to ascend and travel with a greater weight than is possible with the ordinary method of construction, and to enable such kites to be advantageously used for military and other observation purposes in positions where my improved system of construction enables the kite to be readily collapsed, carried and re-erected for use. My invention also has reference to the improved
 10 mechanical arrangements for controlling the movement of the kite and for regulating the speed of its ascent or descent by means of the improved brake or retarding device which I arrange in connection with the kite, winch or mechanism for winding the line cord or cable of the kite.

In the accompanying drawings:—

15 Figure 1 is a diagrammatic elevation illustrating my improved kite system, three pilot kites being shown supporting the main line on which is a travelling carrier kite.

Figure 2 is an elevation on a larger scale of a suitable form of winch I employ.

Figures 3, 4 and 5 are perspective views illustrating my improved kite.

20 Figure 6 is a detail view of the brake mechanism of the winch I employ.

Figure 7 shows an improved form of splicing.

In carrying out my invention according to one modification I employ a series of kites of the same or of varied and increasing size and power preferably arranging the initial kite *a* Figure 1 as a pilot or initiatory apparatus to raise the
 25 first kite of the series from the ground. I connect to the first pilot kite *a* a cord or cable *b* upon which I arrange the series of pilot kites *c c* and the carrying or travelling kites such as *d*, adapted to travel thereon or to be secured at any determined position thereon at the will of the aeronaut as hereinafter explained.

30 I make my kites of the box type the body comprising two double box ends or cells *e, e, f, f* Figures 3 to 5 separated by a partition *p* and connected by four stays or rods *g*, the ends of which are adapted to enter pockets at the respective corners or edges of the cells, each end being tied to the canvas thus obviating the use of tacks, nails or the like fastenings. I preferably add two large wings
 35 or aeroplanes *h h* along the top edges of the body, extending from back to front, and along the bottom edges of the body I arrange smaller wings or aeroplanes *i i*. I support these wings *h i* by diagonal beams or stiffening rods *j j* adapted to pass through holes at the respective edges of the box cells and to enter at their ends into pockets in the respective wings to which they are secured by
 40 tying. The diagonal rods are lashed or otherwise secured together at the points where they intersect, and suitable cross beams or rods are provided where required to stiffen the wings or aeroplanes. The large wings *h h* are preferably formed to a shape resembling the wings of a bird as shown, and the lower wings *i* are preferably of triangular form and serve as foot rests for the kite when resting
 45 on the ground. On the top of the kite I sometimes mount an additional aeroplane *l* somewhat resembling the body and head of a bird. This plane *l* may also be provided with a vertical central plane *m* below.

I cut the canvas or other material forming the wings or planes with slightly concave edges in order to prevent the same flapping in the wind.

50 The upper plane *l*, preferably projects some distance over the front of the kite and extends over from about one to two thirds of the back of the body. It may be attached to any form of kite to prevent ducking but it is not absolutely necessary with my improved kite unless a greater stress or pull on the line or cable is required for any particular purpose.

55 The kite is stiffened or strengthened by suitable stays or cords where required and is attached to the main line or cable *b* by means of a bridle *n*, a second bridle being employed if desired when the upper supplementary plane *l* is used.

Cody's Improvements in Kites and Apparatus for the same.

such bridle being either secured to the main line *b* or to a second main line or cable provided for the purpose, thus flying the kite from two lines. In the latter case I can arrange the pull of the kite to be evenly or otherwise distributed over the two lines or all on one as desired. The second bridle is preferably constituted by two cords such as *o*, *o*. 5

In flying my kites I may arrange a series of kites securely attached to one main cable at predetermined intervals or I may arrange one or more kites to be free to travel on the main line as desired.

I attach a basket, chair or car *q* to each carrying kite by any suitable means such chair or car being adapted to carry a person or weight as desired. 10

When adapting a kite to travel along the main line I provide two travelling pulley blocks *r* and *z* and suspend the kite therefrom as shown in Figure 1 providing the kite with a carrying basket *q*.

I preferably construct my winch in the form of a gun carriage 9 (see Figure 2) upon which the winding barrel or barrels 10 is or are mounted. The gun carriage is extended backwards to form a trail which is provided with one or more fork like members for engaging with the ground, when a strong tension or pull is exerted upon the line. 15

I provide the winch with a brake comprising a grooved pulley *u* on the winch shaft adapted to be engaged or retarded when desired by a brake strap *v* consisting of a number of washers, reels or the like threaded upon a central core like bar one end of which is connected to a brake lever *t* while the other end is secured to the winch frame or other part relatively stationary to the lever which is also pivoted to the winch frame at *w*. 20

I may also provide the winch with a pawl and ratchet to prevent unwinding, the pawl being so adapted that it may be readily rendered inoperative when desired to enable the cable to be readily unwound. 25

In order that the aeronaut may pay out the cable whilst he is suspended in the basket *q* a cord *s* (Figure 6) may be led from there to the lever *t* being passed if required around suitable guide pulleys on the winch frame so that by a pull 30 on the rope the brake is applied, a slackening of the rope causing a release of the brake.

My rods or cross stays may be made of hickory wood bamboo, steel, aluminium or any other suitable material, the wings and body being made of silk, goldbeater skin, sheet aluminium, linen, cotton or in fact any substance suitable for that 35 purpose.

An improved form of wire splicing which I preferably employ is shown in Figure 7. It consists of a central keep 11 of rectangular form around which the inner ends of each wire 12 is looped, doubled back and twisted upon itself, each wire passing round one pair of parallel faces. The keep 11 may be made 40 of copper, aluminium or of any other suitable material and is preferably grooved to receive the wires.

I modify the form of my winding mechanism and the method of connecting the same to the portable carriage to suit the purpose for which my improved kites are to be employed and I vary the number and arrangement of my combination box kites to suit the weight that is to be carried, the position in which 45 such is to be used and the purpose for which the kite is required, making the members of such a form that they can be readily collapsed and carried from one position to another when required for field purposes or made as rigid frames when my improved kites are to be used for stationary observation or advertisement 50 purposes.

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

1.—An improved kite constructed substantially as hereinbefore described with 55 reference to Figures 3, 4 and 5 of the drawings.

Cady's Improvements in Kites and Apparatus for the same.

2.—Controlling the travel of a travelling or carrier kite and the winch of the main cable in a series kite system, substantially in the manner hereinbefore described with reference to Figures 2 and 6 of the drawings.

Dated this 20th day of August 1902.

5

MARKS & CLERK,
18, Southampton Buildings, London, W.C.,
13, Temple Street, Birmingham, and
30, Cross Street, Manchester, Agents.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1902.

www.australian-hang-gliding-history.com

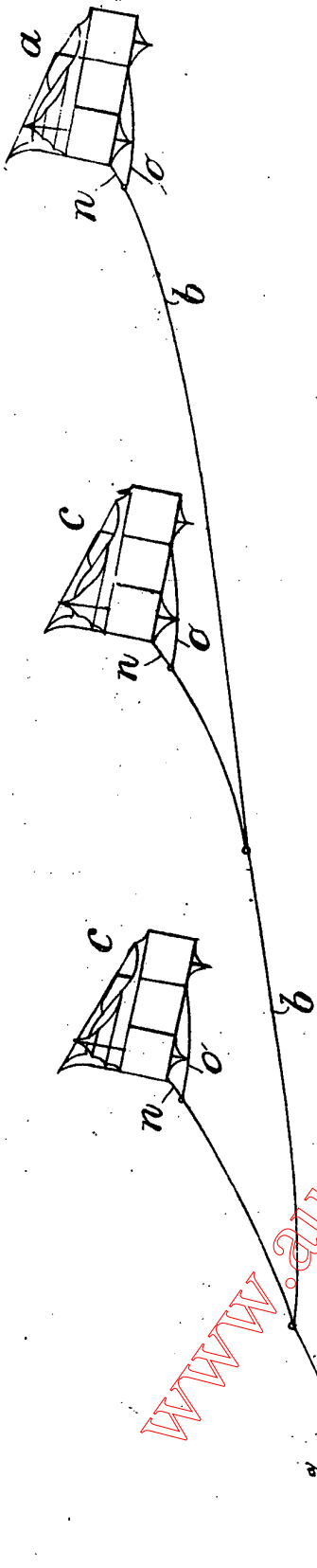


Fig. 1.

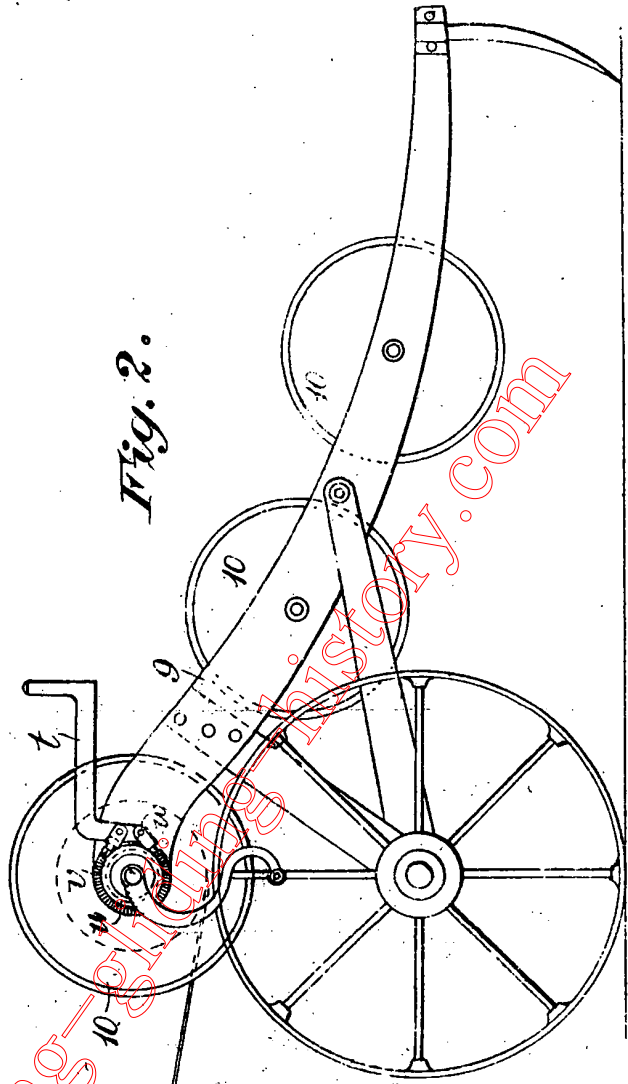


Fig. 2.

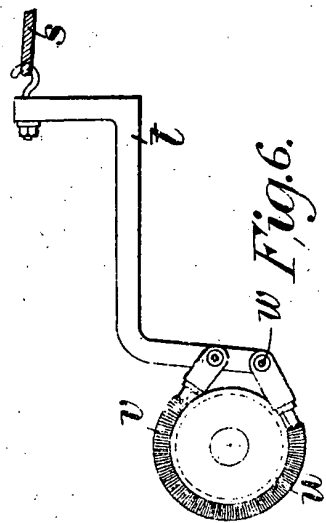


Fig. 6.

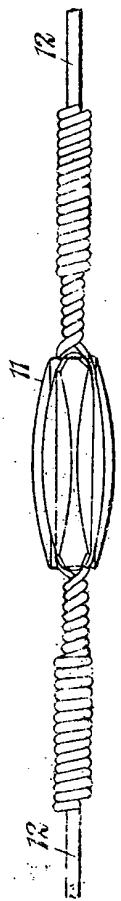


Fig. 7.

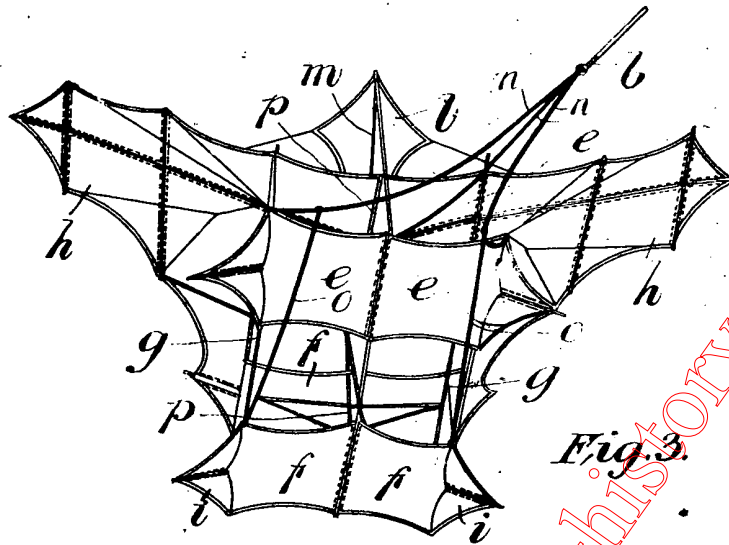


Fig. 3.

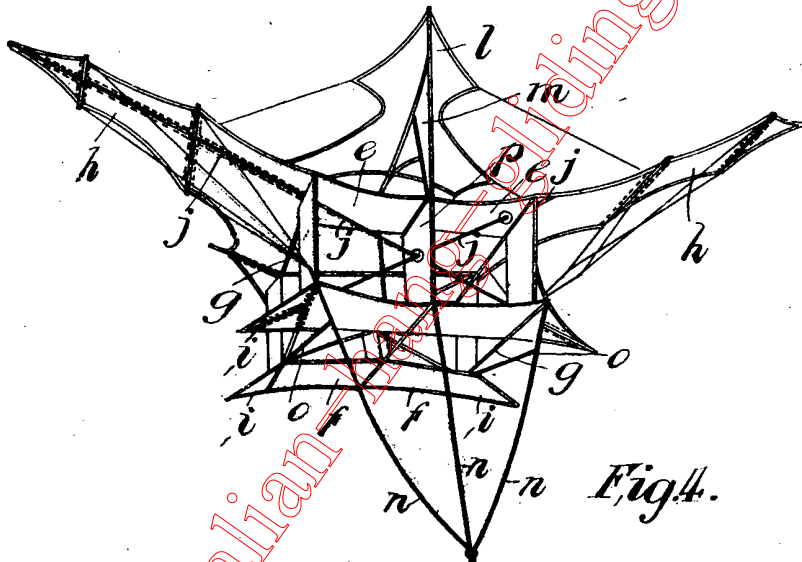


Fig. 4.

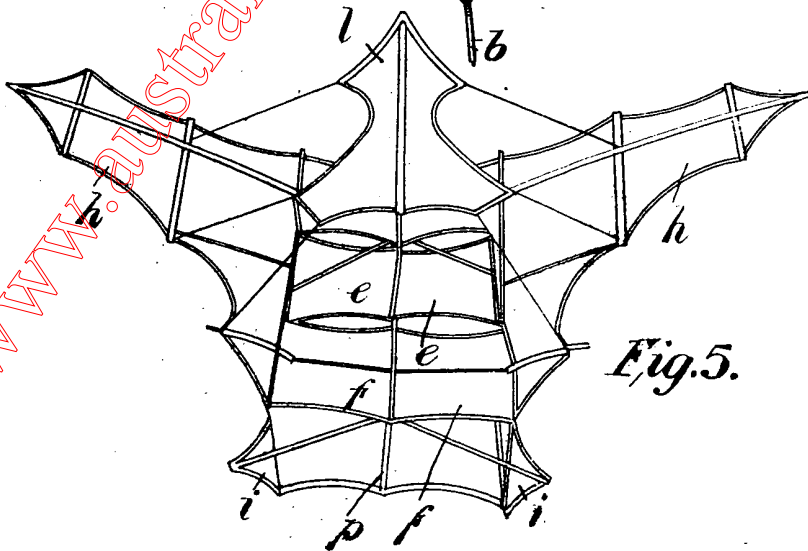


Fig. 5.

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

WWW.AUSTRALIANPATENTBLINDING-HISTORY.COM