Nov. 5, 1929. L. KNOTT 1,734,493

KITE

Filed Nov. 9, 1927

Fig. 1.

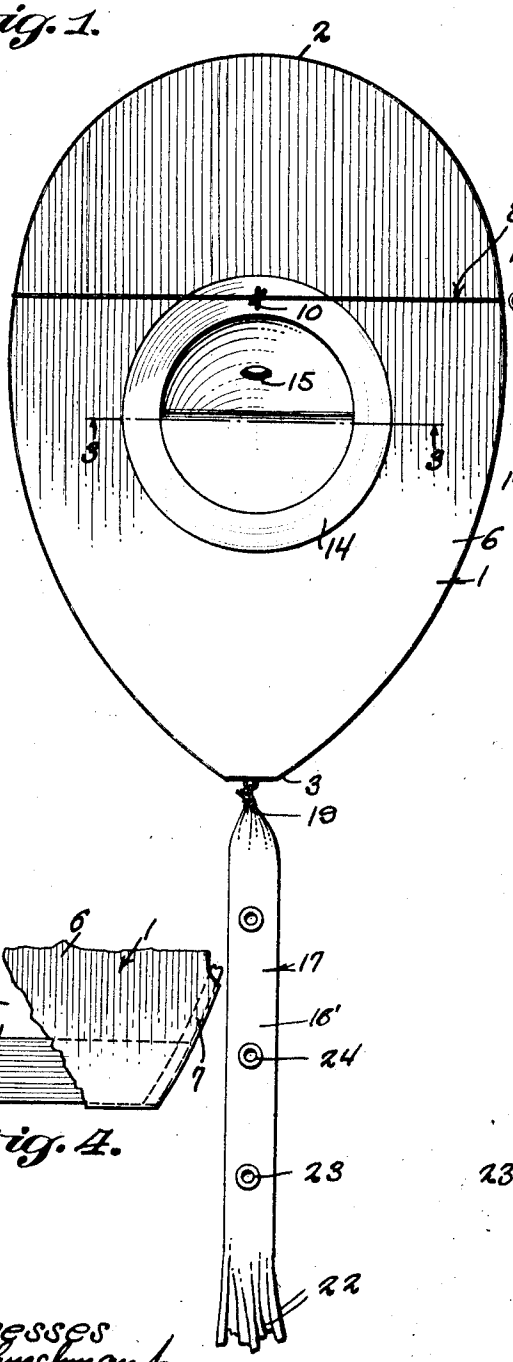


Fig. 2.

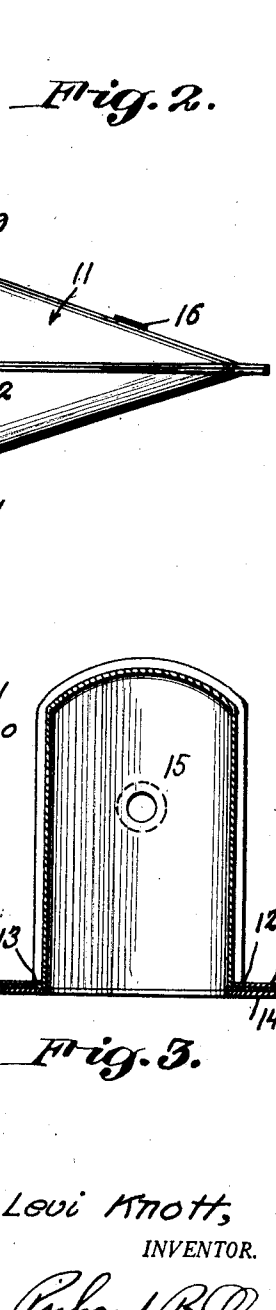


Fig. 4.

Fig. 3.

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UNITED STATES PATENT OFFICE

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KITE

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This invention relates to improvements in kites and has as one of its objects to provide a kite which may be more readily flown than kites as usually constructed and which will not be subject to pitching in the air while being elevated through the influence of the air currents.

Another object of the invention is to provide a kite so constructed that the use of the guy cords, usually employed and extending as branches from the flying cord, is obviated, the invention contemplating the provision, in connection with the web of the kite, of novel means for stabilizing the kite to insure of its even elevation or ascent and to obviate pitching.

Another object of the invention is to provide a kite tail of novel construction and which will not be subject to switching to the same extent as kite tails of ordinary construction, so that, as a whole, the kite embodying the invention will, so to speak, at all times maintain an even keel and will therefore fly in a straight course.

While the accompanying drawings and the description which is to follow, constitute a disclosure of the preferred embodiment of the invention, it will be understood that various changes may be made within the scope of what is claimed.

In the accompanying drawing:

Fig. 1 is a view looking at the under side of a kite constructed in accordance with the present invention;

Fig. 2 is a side elevation of the kite;

Fig. 3 is a sectional view through the stabilizing air-pocket of the kite taken substantially on the line 3—3 of Figure 1 looking in the direction indicated by the arrows;

Fig. 4 is a fragmentary plan view of a portion of the body of the kite.

As illustrated in the drawings, the body of the kite, which is indicated in general by the numeral 1, is flat and of ovate form, the major end of the body, indicated by the numeral 2, constituting the advancing end, and the minor end of the body, indicated by the numeral 3, constituting the trailing end. The said body 1 comprises a frame 4 which is preferably formed from a single strip of light and somewhat resilient wood, bent to the required form, the ends of the loop being connected by a bridge piece 5 which is preferably in the nature of a thin slab of wood which extends across the space between the said ends of the frame, at the minor end 3 thereof and has its ends disposed in overlapping relation with respect to the said ends of the frame and united thereto in any suitable manner. The web of the body is indicated by the numeral 6 and preferably consists of a sheet of paper or other thin material found suitable for the purpose, the blank from which the said web is formed being of substantially the same marginal contour as the frame, namely of an ovate marginal contour, and having its marginal portions wrapped about the frame 4 as indicated by the numeral 7 and united thereto by adhesive or otherwise.

A cord or other flexible element 8 is secured at its ends as at 9 to the frame 4 at opposite sides of the frame, preferably slightly in advance of the minor axis of the frame, and extends across the frame in advance of the web 6, an eyelet 10 being anchored to the said cord 8, midway between the ends of the latter, for the connection of the flying cord (not shown) through the medium of which the flying of the kite is controlled.

In connection with the kite body, the invention contemplates the provision of a stabilizing means for the purpose, as previously stated, of preventing pitching of the kite in its flight and insuring of even flight or in other words flight in a straight course, and this means is in the nature of a stabilizing air pocket indicated in general by the numeral 11. This pocket is likewise made of paper or other thin flexible material and preferably from a pair of counterpart blanks, which are marginally united along opposite sides of the pocket. As illustrated in the drawings, the pocket is of approximately, though not of true conical form and, as previously stated, comprises a pair of counterpart, marginally united blanks, and these blanks constitute the walls of the pocket, the margins of the walls being united in a plane at right angles to the plane of the kite body

and transverse thereto, and these walls are transversely curved between their united side edges and the curvature of each wall is of gradually diminishing degree from the mouth of the pocket to the inner closed end of the pocket. The pocket, at its mouth has its wall directed outwardly as indicated by the numeral 12 and adhesively or otherwise secured to the under side of the web 6, the pocket at its said mouth being received in a circular opening 13 formed in the web, and a reinforcing ring 14, preferably of cardboard or stiff paper, being disposed against and adhesively or otherwise united to the outturned portion 12 of the wall of the pocket, so as to reinforce the connection of the mouth of the pocket with the web, the ring being interiorly of a diameter to register substantially with the wall of the pocket at the mouth thereof, as clearly shown in Figure 3 of the drawing. As stated, the pocket has the general contour of a hollow cone which is broadened diametrically in the direction of its apex and from a point adjacent its base or in other words adjacent the mouth of the pocket, so that, when viewed from the side, as in Figure 2, the pocket has the appearance of a cone, and when viewed from either end of the kite body, it has an approximately rectangular outline. Therefore the opposite sides of the pocket are substantially perpendicular to the plane of the web 6 of the kite body, whereas the front and rear sides of the pocket are converged in the direction of the apex or closed end of the pocket. The pocket is formed in its side which is presented toward the advancing side of the kite body 1, with an opening 15, and the pocket is preferably reinforced, at the point of location of this opening, by an annular disk 16 of thin cardboard or thin stiff paper, or it may be reinforced by some other flexible material found suitable for the purpose.

The tail of the kite is indicated by the numeral 17 and comprises a strip 18 of thin paper or other thin flexible material which is puckered at one end as at 19 and secured, preferably by an eyelet 20 which is engaged with a screw eye 21 threaded into the rear edge of the connecting and bracing piece 5. Incisions are formed in the trailing end of the tail 17 and provide a plurality of thin relatively narrow stringers indicated by the numeral 22. Eyelets 23 are applied by adhesive or otherwise to one or both sides of the strip 18 comprising the tail 17, at suitable intervals in the length thereof, and surround openings 24 formed in the said strip.

In flying the kite, air will be trapped in the pocket 11 and will flow from the pocket through the opening 15, and therefore there will be a continuous flow of air through the pocket from the mouth thereof, lengthwise of the pocket, and through the opening 15, thus maintaining the pocket inflated and, due to the continuous current thus established, stabilizing the kite body so that it will follow a straight course, in its flight. Likewise, due to the peculiar form given the pocket, the kite body will be further stabilized in its flight, and in this manner pitching of the kite is entirely avoided. The openings 24 in the tail of the kite serve substantially the same purpose as the opening 15 in the wall of the pocket 11, namely, that the passage of air through these openings will tend to maintain the tail of the kite straight, at all times, and prevent switching thereof as commonly occurs in the flying of kites provided with tails of the ordinary construction. Therefore the present invention contemplates, on the whole, a kite which will be so stabilized as to insure of a straight course of flight and which kite will not be subject to switching and the uneven flight which is so common to ordinary kites.

Having thus described the invention, what I claim is:

1. A kite including a plane body, and a stabilizing air-pocket upon the upper side thereof having its mouth opening at the under side of the body, the pocket having an air outlet opening in its forward side.

2. A kite including a plane, ovate body, a stabilizing air-pocket upon the upper side of the body having its mouth opening at the under side of the body, and a flying cord anchoring element extending transversely of the body in advance of the mouth of the pocket.

3. A kite including a body comprising a frame of ovate outline, the major end of which is the advancing end, and the minor end of which is the trailing end, a web stretched over the frame and marginally secured thereto, and a stabilizing air-pocket upon the upper side of the web and having its mouth opening at the under side of the web.

4. A kite including a body comprising a frame of ovate outline, the major end of which is the advancing end, and the minor end of which is the trailing end, a web stretched over the frame and marginally secured thereto, and a stabilizing air-pocket upon the upper side of the web having substantially the form of a hollow cone and having its mouth opening at the under side of the web, the said pocket having an air outlet opening in its forward side.

5. A kite including a body comprising a frame of ovate outline, the major end of which is the advancing end, and the minor end of which is the trailing end, a web stretched over the frame and marginally secured thereto, the web having an opening therein, a stabilizing air-pocket upon the upper side of the web of substantially hollow conical form and having its mouth matching with the opening, the said pocket having an air outlet opening at its forward side, near

its apex, and a flying cord anchoring element extending transversely of the body in advance of the mouth of the pocket.

6. A kite including a plane body, a stabilizing air-pocket upon the upper side thereof having its mouth opening at the under side of the body, and a tail connected to the trailing end of the body and comprising a strip-like body having air openings therein located in a series extending lengthwise of the body.

7. A kite including a plane body, a stabilizing air-pocket upon the upper side thereof having an opening in its forward side and having its mouth opening at the under side of the body, and a tail connected to the trailing end of the body and comprising a strip-like member having air-openings at intervals in its length.

8. A kite including a plane body, and a stabilizing air-pocket upon the upper side thereof having its mouth opening at the under side of the body, the said pocket having a wall presented toward the advancing end of the body and a wall presented toward the trailing end of the body, the walls being marginally united, the said walls being transversely curved between their united side edges and the curvature of each wall being of gradually diminishing degree from the mouth of the pocket to the closed end of the pocket, the said pocket having an air outlet opening in its first mentioned wall.

In testimony whereof I affix my signature.

LEVI KNOTT.