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L. HOPKINS ET AL

2,057,148

KITE

Filed Jan. 18, 1936

Fig. 1.

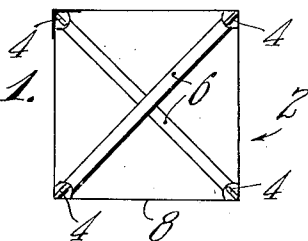


Fig. 2.

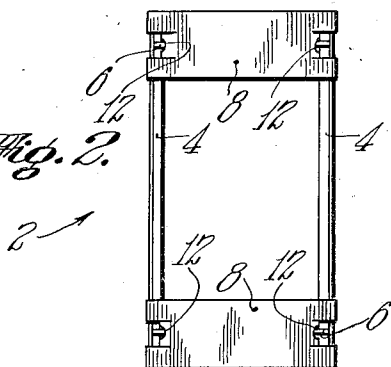


Fig. 3.

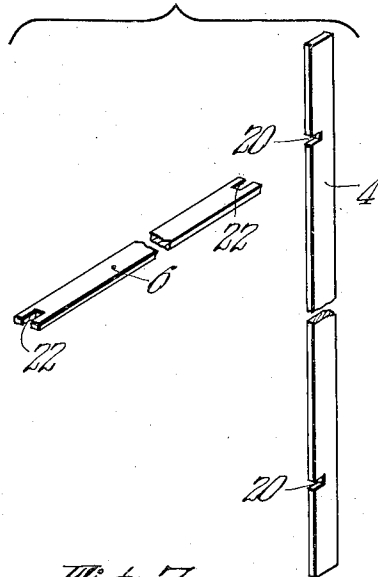


Fig. 7.

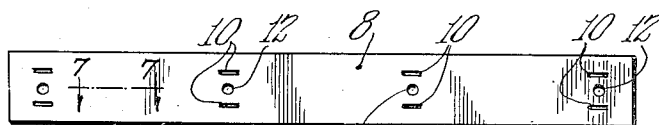


Fig. 4.

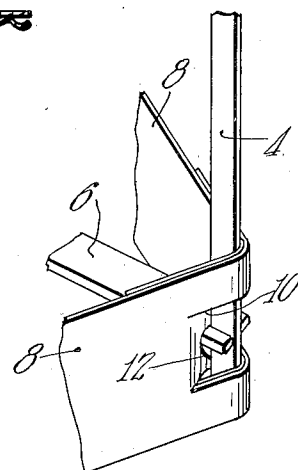
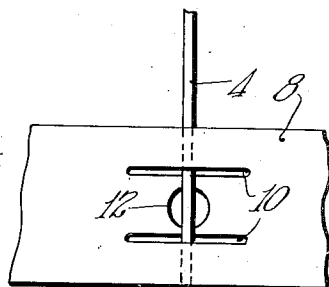


Fig. 6.

Fig. 5.



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## UNITED STATES PATENT OFFICE

2,057,148

KITE

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Application January 18, 1936, Serial No. 59,744

8 Claims. (Cl. 244—23)

This invention relates to improvements in kites and is directed more particularly to improvements in kites called box-kites.

Certain novel features of the invention are directed to the provision of a kite having corner and diagonal struts and bands which are constructed and arranged to facilitate the secure assembling thereof without the necessity of fasteners, adhesives, or the like thus facilitating the ready assembling and disassembling for future use and this is accomplished by interweaving the struts and bands.

It is one object of the invention to provide a box kite the bands of which are formed with air channels or passageways which contribute to the ease and facility with which the kite may be flown.

Various novel objects and advantages of the invention will be apparent from the following description thereof, reference being had to the accompanying drawing wherein:

Figs. 1 and 2 are plan and side elevational views respectively showing a kite embodying the novel features of the invention;

Fig. 3 is a perspective view showing a corner strut and transverse strut disassembled;

Fig. 4 is a plan view of one of the bands of the kite shown in Figs. 1 and 2;

Fig. 5 is a large scale fragmentary plan view showing how one end of a corner strut is associated with one of the bands;

Fig. 6 is a fragmentary perspective view showing how the struts and bands are assembled; and

Fig. 7 is an enlarged sectional view on the line 7—7 of Fig. 4.

Referring now to the drawing in detail, the invention will be fully described.

The kite 2 of the invention in a general way consists of longitudinal corner struts 4, transverse diagonal bracing struts 6 and upper and lower bands 8 all of which are constructed in a novel manner to facilitate assembling or setting up of the parts as well as knocking them down.

The bands 8 are provided with longitudinally spaced sets or rows of openings each of which set includes slits or slots 10 and a central opening 12 as shown in Fig. 4. The bands 4 are of pliable material such as fabric or paper and when assembled with the other parts the opposite ends are disposed in overlapping relation with the openings of the endmost sets thereof in register with one another.

Preferably the bands are provided with transverse air channels and this may be accomplished by employing two plies of paper such as 14 and

16 as shown in section in Fig. 7. One of the plies such as 16 is fluted or corrugated and is suitably secured to a backing so as to form channels 18 therebetween.

The channels are preferably arranged transversely of the bands so as to be disposed longitudinally of the kite when the parts are assembled.

The longitudinal corner 4 struts are preferably of light wood or the like and have sockets such as 20 for interfitting with similar sockets 22 in the ends of the diagonal struts 6, all as shown in Fig. 3.

In assembling the parts, the end portions of the struts 4 are assembled with the strips as in Figs. 5 and 6. That is, the ends of the struts are inserted in the slits 10 of the bands 8 so that there are parts of the struts outside the bands and adjacent parts inside the bands with the sockets 20 thereof in the openings 12 of the bands. In this way the ends of the struts are interwoven with the bands. The ends of the bands are arranged in overlapping relation so that the openings thereof are in register and one of the struts 4 then functions to hold the ends of the bands together as in Fig. 6.

With the ends of the struts thus interwoven with the bands and the bands held in overlapping relation, the diagonal struts 6 have their ends extending through the openings 12 in the bands and interlocked with the struts 4 as in Fig. 6 with the struts.

The struts 4 are more or less flexible so as to be readily slipped into place and serve to tension the bands which have their ends held against separation.

As will be observed, the bands, diagonal struts and corner struts are constructed and arranged so that the bands and transverse struts are held against movements longitudinally relative to struts 4 while struts 6 brace and hold the parts in set up relation.

While we have described the invention in great detail and with respect to a preferred form thereof, it is not desired to be limited thereto since many changes and modifications may be made therein without departing from the spirit and scope of the invention. What it is desired to claim and secure by Letters Patent of the United States is:

1. A kite comprising in combination, longitudinal corner struts, bands having longitudinally spaced sets of transversely spaced openings, opposite ends of said struts extending through certain openings of said sets, and cross struts ex-

tending across the kite with end portions thereof extending through other openings into engagement with the longitudinal struts.

2. A box kite comprising, longitudinal corner  
5 struts, diagonal transverse struts, and bands extending around the longitudinal struts at opposite ends of the kite, the said bands having spaced slits through which the ends of the longitudinal struts extend and openings through  
10 which the ends of the transverse struts extend.

3. A box kite comprising in combination, longitudinal corner struts, bands at opposite ends thereof, and diagonal transverse struts, the said bands having sets of spaced openings with the  
15 ends of the corner struts extending therethrough with portions of said strut inside said band and other portions outside thereof while the ends of the bands are overlapped, and the said bands provided with other openings through which the  
20 ends of the transverse struts extend and the said corner and longitudinal struts and transverse struts provided with engageable parts.

4. A box kite comprising in combination, relatively narrow upper and lower bands having their  
25 opposite ends in overlapped relation and provided with longitudinally spaced sets of spaced openings with the openings of the endmost set of the bands in register, longitudinal corner struts each having their ends inserted in certain of the  
30 openings of the sets with portions of said ends inside and other portions outside said bands and the said bands being held together by said ends, and diagonal wedging struts having opposite ends extending through certain openings of the  
35 bands into engagement with the corner struts.

5. A box kite comprising in combination, relatively narrow upper and lower bands having their opposite ends in overlapped relation and provided with longitudinally spaced sets of spaced  
40 openings with the openings of the endmost set of the bands in register, longitudinal corner struts each having their ends inserted in certain of the openings of the sets with portions of said ends inside and other portions outside said bands and  
45 the said bands being held together by said ends,

diagonal wedging struts having opposite ends extending through certain openings of the bands into engagement with the corner struts, and locking means associated with said corner and diagonal struts whereby the bands and struts  
5 are held against shifting movements.

6. A box kite comprising in combination, relatively narrow upper and lower bands having their opposite ends in overlapped relation and provided with longitudinally spaced sets of spaced  
10 openings with the openings of the endmost set of the bands in register, longitudinal corner struts each having their ends inserted in certain of the openings of the sets with portions of said ends inside and other portions outside said bands and  
15 the said bands being held together by said ends, diagonal wedging struts having opposite ends extending through certain openings of the bands into engagement with the corner struts, the said  
20 bands being provided with channels disposed transversely thereof and parallel to said corner struts.

7. A knock-down kite comprising in combination, upper and lower bands having longitudinally spaced sets of spaced openings, longitudinal  
25 corner struts adapted to have their end portions inserted in certain openings of the sets whereby the ends of the strips may be overlapped with the end of a strut in the sets of openings adjacent the ends of the bands to secure the ends  
30 of the bands together, said transverse struts adapted to have their ends inserted in other openings of said sets to engage the longitudinal struts and brace them in kite-forming relation.

8. A box kite comprising in combination, a set  
35 of longitudinal corner struts and bands having opposite ends overlapped and disposed at opposite ends of the struts, the ends of the struts being interwoven with the bands and holding the ends of the bands in overlapped relation, and transverse  
40 bracing struts at opposite ends of the kite extending diagonally between opposite corner struts.

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