(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 761 910 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.03.1997 Bulletin 1997/11

(51) Int Cl.[6]: **E04H 15/40**

(21) Application number: **96306537.0**

(22) Date of filing: **09.09.1996**

(84) Designated Contracting States:
BE CH DE DK ES FR LI NL SE

(30) Priority: **12.09.1995 GB 9518585**

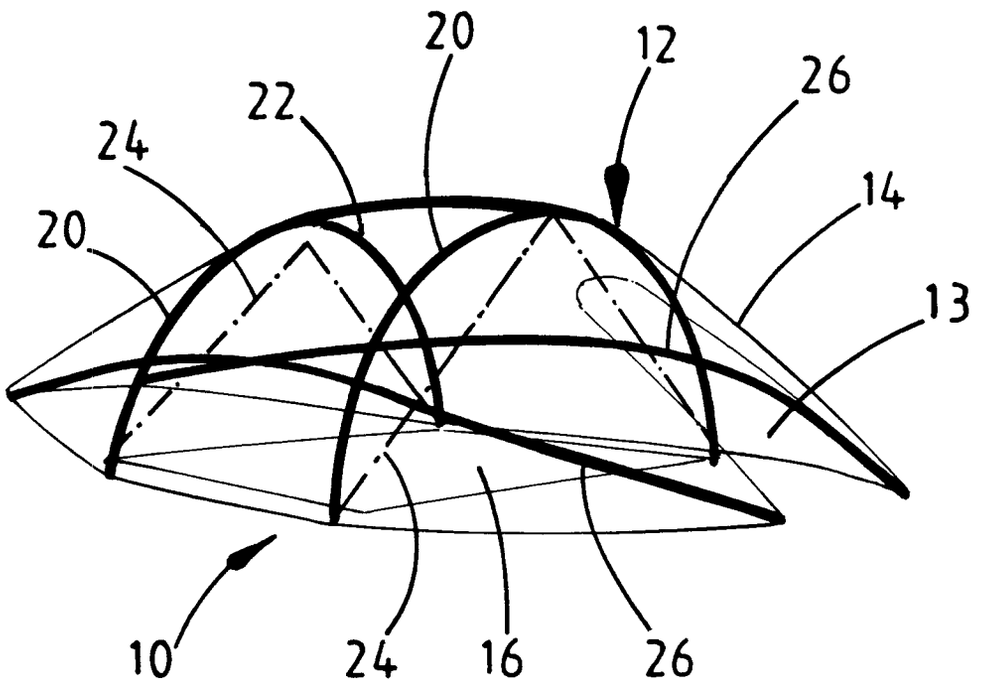
(71) Applicant: **Vango (Scotland) Limited**
Greenock PA15 2UB, Scotland (GB)

(72) Inventor: **Tate, Aarn**
Skelmersdale, Lancashire WN8 6SR (GB)

(74) Representative: **Lyons, Andrew John et al**
ROYSTONS
Tower Building
Water Street
Liverpool L3 1BA (GB)

(54) Improvements in and relating to tents

(57) A tent (10), typically a tunnel tent, has a frame (12) supporting a fly sheet (14) and an inner tent. The frame (12) comprises a pair of arched poles (20) and along opposite sides of the tent flexible poles (26) from lower points at or near one end of the tent (10) to lower points at or near another end of the tent (10) and passing through higher points in their mid-sections.



EP 0 761 910 A1

Description

This invention concerns improvements in and relating to tents, especially tunnel tents.

Tunnel tents are generally defined as using one or more arched poles transverse to the tent axis with tension from the tent ends via tent pegs to create a stable structure. Tunnel tents generally have an outer fly sheet support on the arched poles and on inner tent suspended within the outer fly sheet but not touching same.

A tunnel tent is desirably erected with its axis in the direction of the prevailing wind. A tunnel tent is aerodynamically shaped along its axis so that winds in that direction do not adversely affect its stability. However, if the wind direction changes or the tent has to be put up in a position where the wind impacts the tent sides, the tent can become unstable.

In high winds which hit the side of a tunnel tent, however, the arched pole or poles can be distorted and the outer fly sheet can come into contact with the inner tent. Such contact is undesirable because it bridges the cold barrier created between the inner and outer sheets and can allow moisture passage to the inner tent walls.

An object of this invention is to improve stability of tents especially against impact of side winds.

According to this invention there is provided a tent, especially a tunnel tent, having along a side thereof a flexible pole from a lower point at or near one end of the tent to a lower point at or near another end of the tent and passing through a higher point in its mid-section.

In relation to tunnel tents it is preferred that said flexible side poles be provided on both sides of the tent. It is further preferred that the flexible side poles extend substantially the full length of the tent and preferably from the floor thereof at each end.

Thus, in a tunnel tent the preferred flexible side poles are arcuate, cross the tunnel forming arched pole or poles and support the outer fly sheet. The outer fly sheet is given a convex shape front to back of the tent by the side poles.

The side poles will preferably be contained in sleeves of the fly sheet which may be continuous or discontinuous. The side poles are preferably in sections connected by elastic members, such as shock cord, for ease of carrying and for ease of erection.

The preferred side poles brace the arched pole or pole against side wind impact and may also tension ends of the tent even to the extent that pegs are not necessary to maintain structural integrity of the tent.

This invention will now be further described, by way of example only, with reference to the accompanying drawing which shows schematically a tunnel tent according to the invention.

Referring to the accompanying drawing, a tunnel tent 10 has a frame designated 12 supporting a fly sheet 14 and an inner tent (not shown but whose ground area is indicated by the rectangle 16). The inner tent is suspended within the frame 12. The fly sheet 14 is, shown having an opening 18 at one end, which will usually comprise a closeable flap. The fly sheet may also have a similar opening at its other end.

The frame 12 comprises a pair of arched poles 20 set parallel to each other and transversely of the longitudinal axis of the tent.

An arcuate ridge pole 22 connects the apexes of the poles 20 but is not essential. Tensioning bands 24 are indicated by the broken lines. These are length adjustable straps connecting the base of each pole 20 to its apex. By shortening the length of each strap, the arched poles 20 can be tensioned to increase their stability and in particular to reduce their distortion in high winds and increase their strength under snow loads.

Further poles 26 are provided along sides of the tent running from one end to the other and crossing over the arched poles 20. These further poles 26 or side impact poles are also arcuate and have each end at ground level with their middles spaced from the ground perhaps just less than halfway up the height of the tent.

The side poles 26 are provided to prevent the fly sheet touching the inner tent in high winds in order to maintain a cold barrier and to prevent a passage of moisture across from the fly sheet to the inner tent. Additionally, the side poles brace the tent against side winds and so improve stability. Furthermore, the side poles 26 tension the tent ends so that pegs are not necessary to maintain the structural integrity of the tent, although pegs will usually be provided for securing the tent to the ground.

The poles 20, 22, 26 may be made of a light metal alloy, such as of aluminium or of fibre glass and will come in sections connected by shock cord for ease of erection. The poles 20, 22, 26 will generally be contained in sleeves on the inner or outer surface of the outer fly sheet or of the outer surface of the inner tent. The sleeves may be continuous or discontinuous.

Claims

1. A tent having along a side thereof a flexible pole from a lower point at or near one end of the tent to a lower point at or near another end of the tent and passing through a higher point in its mid-section.

2. A tent as claimed in claim 1 in the form of a tunnel tent.

3. A tent as claimed in claim 2, wherein said flexible poles are provided on both sides of the tent.

4. A tent as claimed in claim 2 or 3, wherein said flexible side poles extend substantially the full length of the tent.

5. A tent as claimed in claim 2, 3 or 4, wherein said flexible side poles extend from the floor of the tent

at each end.

6. A tent as claimed in any one of claims 1 to 5, wherein the flexible side poles are arcuate.

7. A tent as claimed in any one of claims 2 to 6, wherein said flexible side poles cross tunnel forming arched poles of the tent.

8. A tent as claimed in any one of claims 1 to 7, wherein the flexible side poles support an outer fly sheet of the tent.

9. A tent as claimed in claim 8, wherein the outer fly sheet is given a convex shape front to back of the tent by the side poles.

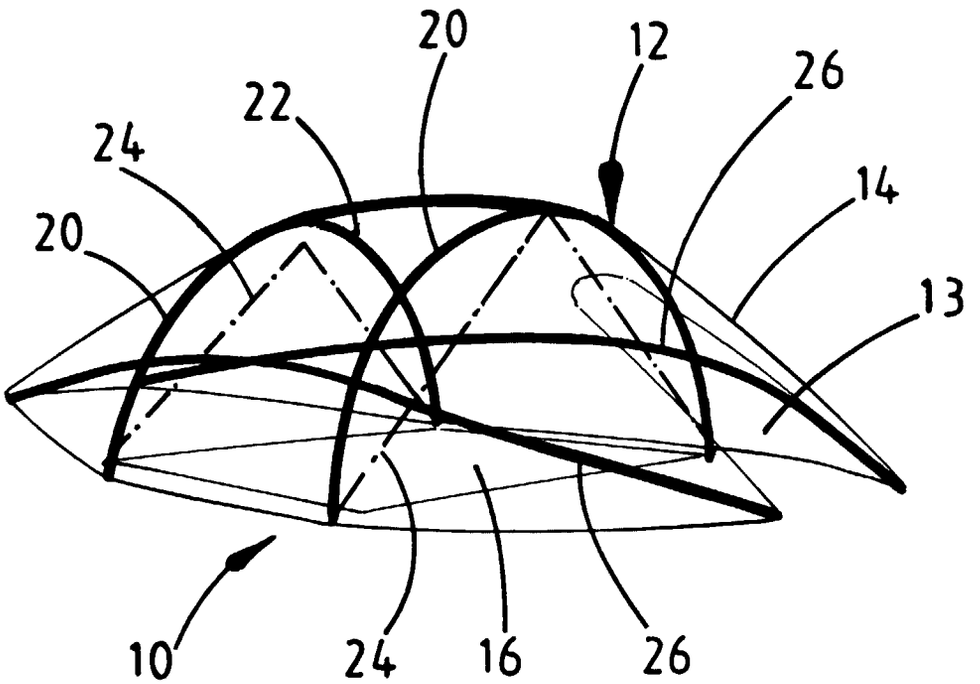
10. A tent as claimed in claim 8 or 9, wherein the flexible side poles are contained in sleeves of a fly sheet.

11. A tent as claimed in any one of claims 1 to 10, wherein the sleeves are continuous.

12. A tent as claimed in any one of claims 1 to 10, wherein the sleeves are discontinuous.

13. A tent as claimed in any one of claims 1 to 12, wherein the flexible side poles are in sections connected by elastic members.

14. A tent as claimed in claim 13, wherein the elastic members are of shock cord.


20
12
26
22
24
14
20
13
10
24
16
26

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 30 6537

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US-A-4 265 259 (R. E. GILLIS) * the whole document *	1-7	E04H15/40
X	US-A-3 909 993 (C. F. HUDDLE) * column 3, line 7 - line 21; figures 2,9,10 *	1-4,6,7	
A	US-A-4 165 757 (G. R. MARKS) * the whole document *	8-12	
A	DE-C-853 809 (HANS DEUTER) * the whole document *	8-12	
A	DE-U-88 07 891 (R. KOWALSKI) * page 10, line 27 - line 34; figures 8,9 *	11,12	
A	EP-A-0 428 297 (A. TATE) * the whole document *		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12 December 1996	Delzor, F

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)