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

(11) EP 1 308 581 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.05.2003 Bulletin 2003/19

(51) Int Cl.[7]: **E04H 15/38**, E04H 15/40, E04H 15/42

(21) Application number: **02102440.1**

(22) Date of filing: **11.10.2002**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **01.11.2001 GB 0126226**

(71) Applicant: **Kevin Nash Tackle Limited**
Hockley, Essex SS5 5LR (GB)

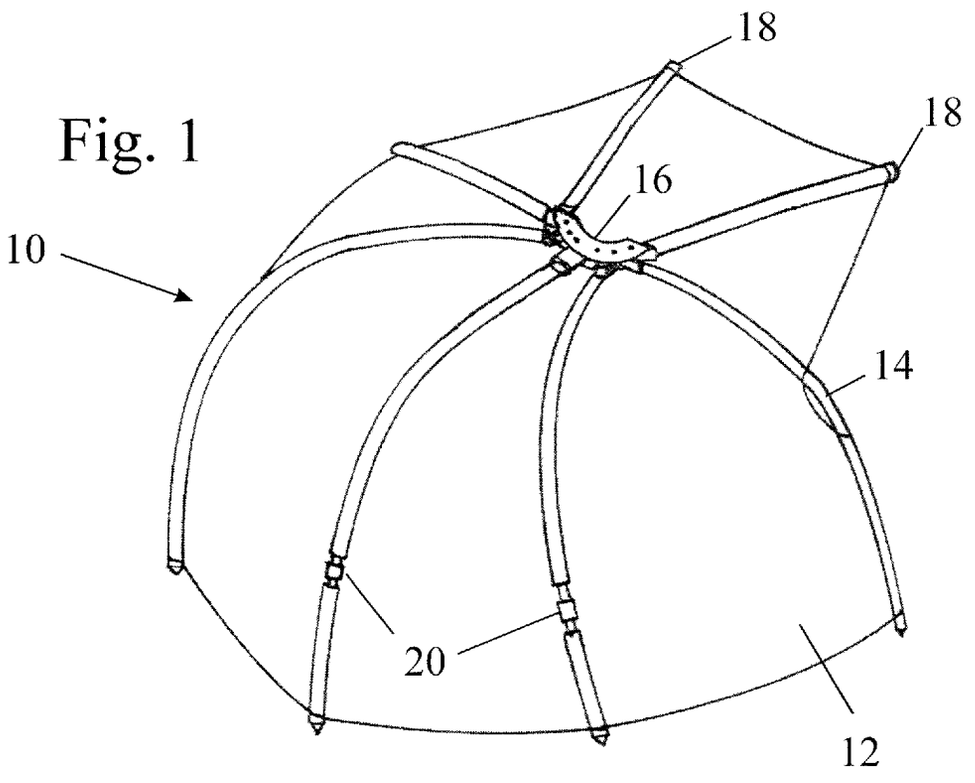
(72) Inventor: **Nash, Kevin**
Hockley, Essex SS5 5LR (GB)

(74) Representative: **Messulam, Alec Moses et al**
A. Messulam & Co. Ltd.,
43-45 High Road
Bushey Heath, Bushey, Herts WD23 1EE (GB)

(54) Collapsible Frame Tent

(57) A tent comprises a canopy 12 fitted to a frame having rigid ribs 14. Elongate sleeves 22 of an elastic material are sewn to the canopy 12 to project from its outer side and the canopy is fitted to the frame by passing the ribs 14 of the frame through the elastic sleeves 22. In this way, the canopy is kept taut without placing the seams under excessive stress despite stretching and contracting of the fabric of the canopy during changes in weather conditions.

Fig. 1



EP 1 308 581 A1

Description

[0001] The present invention relates to a collapsible frame tent and is especially concerned with a tent for use by anglers.

[0002] Tents used by anglers need to be collapsible for ease of transportation and simple to erect. Some tents are formed in the same way as umbrellas with resilient spokes radiating from a central hub. The collar on which the spokes are pivoted slides along a shaft and after the collar has been locked in its raised position, a section of the shaft is unscrewed in order not to obstruct the space enclosed by the canopy stretched over the spokes.

[0003] A collapsible tent with a more rigid frame is described in the Applicants' earlier GB Patent No. 2,259,927. In this case, the tent has ribs that are pivotably secured to a central hub. When the tent is erected, the rubs extend generally radially from a central axis and a one-piece canopy is secured to and maintained taut by the ribs. The ribs are pivotable relative to the hub about an axis parallel to the central axis of the extended canopy and the tent is collapsed by first releasing the hem of the canopy from at least one of the ribs to allow the frame to be folded in the manner of a fan rather than an umbrella.

[0004] The present invention is concerned with an improvement of the text described in GB 2,259,927 which may also be applied to any form of tent in which a canopy is stretched over rigid rather than resilient ribs.

[0005] A problem that is experienced with a tent having a frame with rigid ribs is that a canvas canopy stretches and contracts during use depending on weather conditions, the fabric being affected by both temperature and moisture. In GB 2,259,927, the frame is connected to the canopy by threading the ribs through pockets formed in the canopy at the seams between the different sections of the canopy. If the canopy stretches, then it is not held taut by the ribs and forms creases and ridges which aside from being unsightly allow condensation to collect and then drip on to the occupant of the tent. On the other hand, if the canopy material should contract, then the canopy becomes too taut and the seams between its various sections are placed under stress. The seams are normally made waterproof by covering them on the inside of the tent with an adhesive tape and as the tape does not stretch and contract at the same rate as the material of the canopy, the adhesive layer shears and the tape separates from the seams. In more severe cases, there is even the risk of the seams coming apart.

[0006] With a view to mitigating the foregoing disadvantages, the present invention provides a tent comprising a canopy fitted to a collapsible frame having rigid ribs, wherein elongate sleeves of an elastic material are sewn to the canopy to project from its outer side and the canopy is fitted to the frame by passing the ribs of the frame through the elastic sleeves.

[0007] The provision of elongate elastic sleeves allows the canopy to be maintained under substantially constant tension even if it contracts or stretches as a result of changes in climatic conditions. The canopy is maintained taut when wet to avoid condensation collecting on and dripping from creases and the sleeves stretch when the canopy contracts to avoid stressing the seams of the canopy.

[0008] Preferably, the elastic sleeves are sewn into the seams between the sections of the canopy.

[0009] It is advantageous for the tent to be of the type described in GB 2,259,927, but it will be clear that the invention may be applied to any tent having rigid ribs.

[0010] The invention will now be described further, by way of example, with reference to the accompanying drawings, in which

Figure 1 shows a prior art tent, the drawing being the same as Figure 1 if GB 2,259,927, and
Figure 2 shown a similar view of a tent in accordance with the present invention.

[0011] The collapsible tent 10 in Figure 1 comprises a canopy 12 stretched over a frame made up of ribs 14 that are pivotably connected to a hub 16. The hem of the canopy is attached by releasable end caps 18 two of the ribs. After the caps 18 have been removed from the ribs of the frame, all the ribs can be pivoted about the hub 16 with the canopy being removed from the frame so that the entire tent collapsed in a manner similar to a fan. The longer ribs have hinges 20 and other means of articulation so that they may be folded over to render the collapsed tent more compact.

[0012] This tent is more fully described in GB 2,259,927 and is described herein only as an example of a frame tent in which the canopy is stretched over rigid ribs.

[0013] The canopy 12 is formed of different sections that are sewn to one another. An elongate pocket is formed at each seam and the canopy is connected to the frame by passing the ribs 14 through these pockets. The pockets are made from the material of the canopy and provide a connection between the canopy and the rigid frame ribs that is not very compliant.

[0014] The embodiment of the invention shown in Figure 2 is generally similar to that of Figure 1 and, to avoid repetition, the same reference numerals have been allocated to equivalent components. The essential difference resides in the fact that in place of pockets made from the material of the canopy, elongate sleeves 22 made of an elastic material are sewn into the seams between the sections of the canopy. The sleeves 22 provide a significant degree of compliance as they can change in length to maintain a constant tension in the canopy. As a result the material of the canopy does not ruck up when it is cold and damp and the seams are not put under excessive stress during hot and dry weather conditions.

[0015] As with the tent of Figure 1, a self adhesive tape may be placed over the seams on the inside of the tent for weatherproofing. The tendency for such tape to separate from the material of the canopy through changes in tension is reduced by the provision of the sleeves 22.

[0016] It is again possible for at the least the longer ribs of the frame to be articulated to reduce the size of the tent when it is collapsed.

[0017] Because the sleeves 22 are elongate, they apply a force over a large area of the canopy to maintain it under constant tension and ensure that all sections of the canopy stretched between adjacent ribs are convex outwards. This avoids any areas in which water can collect in pools. Also because of the elongation of the sleeves, less stress is placed on the seams because the force better distributed.

[0018] It should be stressed that the invention is not just applicable to tent having frames of the type shown in the drawings. An alternative frame design that would benefit from the same canopy tensioning elastic sleeves resembles the mechanism used in pram covers. Here three or more approximately semi-circular rigid ribs extend between two hubs that are arranged one on each side of the tent. The ribs lie flat against each other when the tent is collapsed. When the tent is erected, the hem at one end of the canopy is anchored to the ground. The rib at the opposite end of the tent defines the entrance to the tent and can be anchored to the ground by means of poles. The ribs could be pivotably connected to two hubs but it preferred to plug the ends of the ribs into locating eyelets that are formed in the groundsheet of the tent.

[0019] With such a tent, the provision of elastic loops at the seams between sections, through which the ribs are passed, ensures that the canopy is always under the correct tension to avoid rucking and excessive stress on the seams, as the material of the canopy expands and contracts.

Claims

1. A tent (10) comprising a canopy (12) fitted to a collapsible frame having rigid ribs (14), **characterised in that** elongate sleeves (22) of an elastic material are sewn to the canopy (12) to project from its outer side and the canopy (12) is fitted to the frame by passing the ribs (14) of the frame through the elastic sleeves (22).

2. A tent as claimed in claim 1, wherein the elastic sleeves (22) are sewn into the seams between the sections of the canopy.

3. A tent as claimed in claim 2, wherein the seams between all the sections of the canopy have elastic sleeves (22) sewn therein to receive respective rigid rib (14) of the collapsible frame of the tent.

4. A tent as claimed in any preceding claim, wherein the frame comprises a plurality of ribs (14) pivotably secured to a central hub (16) and extending generally radially from a central axis when the tent is erected, and wherein the canopy (12) is a one-piece canopy that is maintained taut by the ribs (14) when the tent is erected and remains secured to the ribs (14) when the tent is collapsed, the ribs (14) being pivotable relative to the hub (16) about axes which are generally parallel to the central axis and the hem of the canopy being releasably secured to at least one of the ribs such that securing of the hem of the canopy to all of the ribs when the tent is erected serves to prevent the tent from being collapsed.

5. A tent as claimed in claim 4, wherein at least some of the ribs (14) are articulated (20).

6. A tent as claimed in any of claims 1 to 3, wherein the frame comprises a plurality of substantially semi-circular rigid ribs that extend between two hubs arranged one on each side of the tent.

Fig. 1

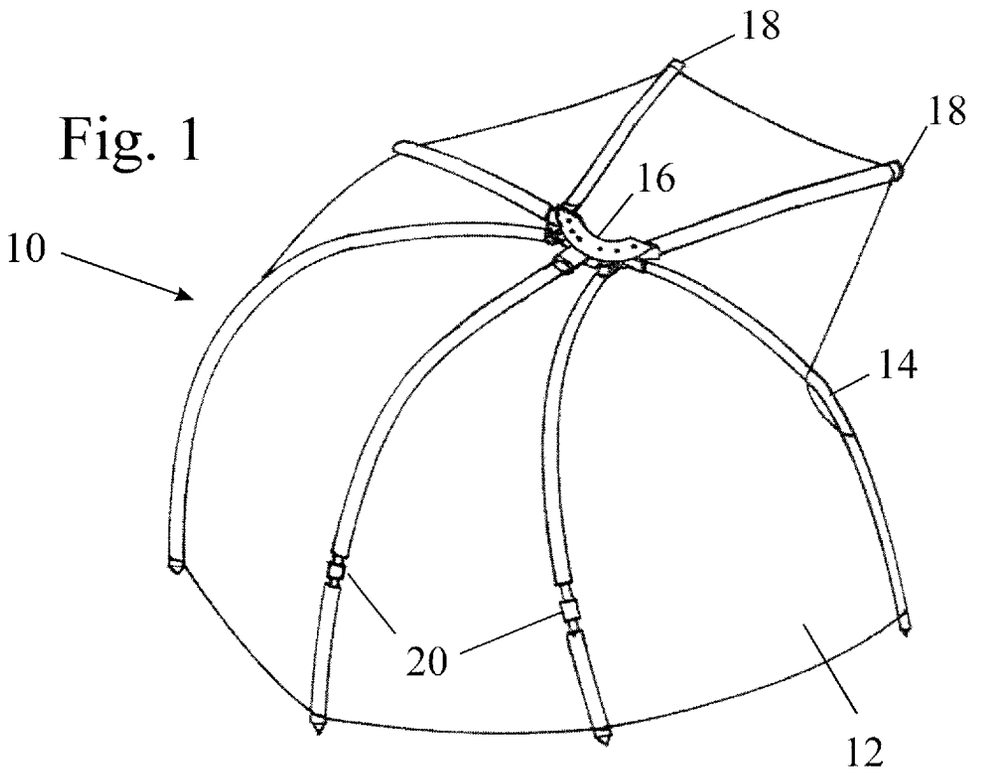
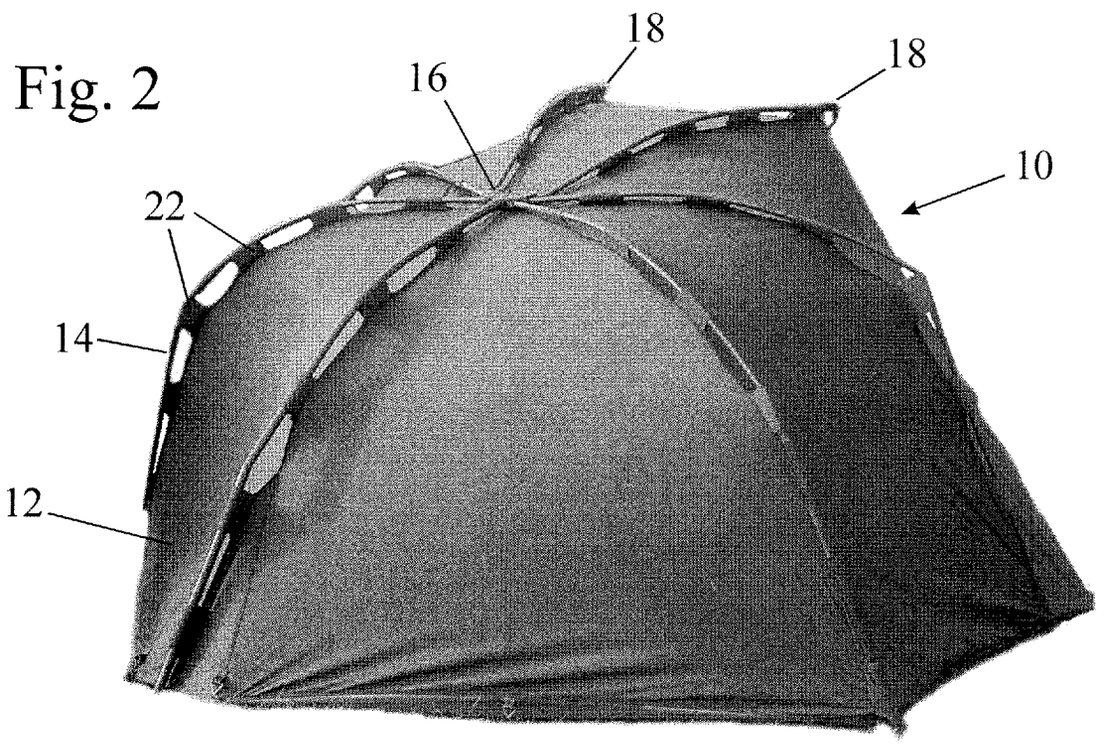


Fig. 2



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 10 2440

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.7)
A	US 5 927 311 A (JAGER BILL) 27 July 1999 (1999-07-27) * column 2, line 48 - column 3, line 4 * * column 3, line 26 - line 47 * * column 4, line 66 - column 5, line 8 * * column 5, line 15 - line 18 *	1,5	E04H15/38 E04H15/40 E04H15/42
A	US 5 080 119 A (SCHERER MICHAEL J) 14 January 1992 (1992-01-14) * column 2, line 54 - column 3, line 55 *	1-3	
D,A	GB 2 259 927 A (NASH KEVIN TACKLE LTD) 31 March 1993 (1993-03-31) * the whole document *	1,4,5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 December 2002	Fordham, A

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)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 02 10 2440

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-12-2002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5927311 A	27-07-1999	NONE	
US 5080119 A	14-01-1992	NONE	
GB 2259927 A	31-03-1993	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82