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(54) **A structure of an easy setup tent**

(57) A tent structure comprises a cap 12 having a plurality of poles 141 articulately coupled thereto and extending therefrom. Each pole 141 is articulately coupled to a member 142 which in turn is articulately coupled to a hub 11. The hub 11 and cap 12 are aligned along a central axis of the tent framework, and the position of hub 11 relative to the cap 12 depends upon whether the tent structure is erected or collapsed. The hub 11 is moved in an axial direction into engagement with the cap 12 when erecting the tent structure by pulling rope 21 through the cap 12. When erected, the tent framework has a substantially pyramidal shape with the cap 12 at its apex; the poles 141 are braced outwardly from the central axis by the members 142. When collapsed, the tent framework has an elongate shape with the poles 141 substantially parallel to the central axis.

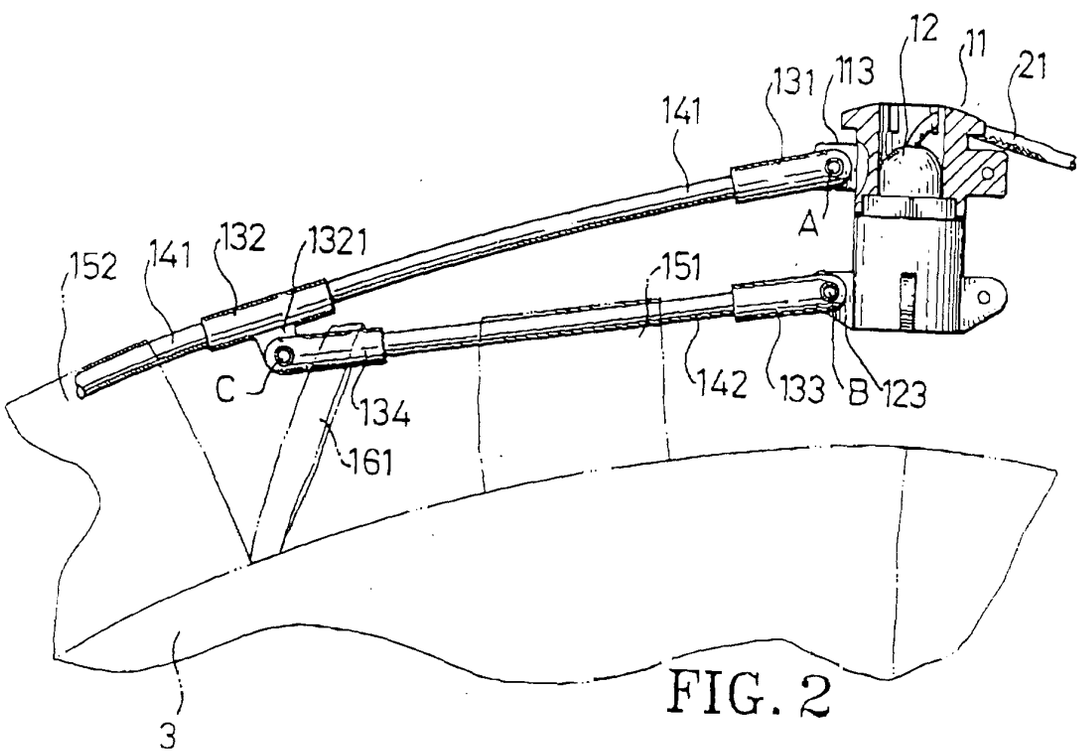

FIG. 2

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Description

Background of the Invention

[0001] The invention is related to a structure of an easy setup tent, specifically tent which can be set up in very short time. The structure referred herein will not only be suitable for camping but also for beach shelters, fishing tents, and other tents and shelters used outdoors.

[0002] Generally, a tent for outdoor use should be light-weight for ease of portability, setup , removal and storage. Most outdoor tents are wall tents and Mongolian tents. Because of its weightiness, a wall tent is inconvenient to carry. Normally, to set up a wall tent, one requires some experience and skill. A Mongolian tent is lighter because of its new canvas material and structure used; it is therefore easier to set up . In setting up a Mongolian tent, weather conditions may affect whether or not tent spikes are needed to secure the tent to the ground; under most circumstances, the insertion of spikes into the soil won't be necessary. Unlike Mongolian tents, wall tents must be stabilized by spikes. Mongolian tents are clearly more convenient than wall tents. Despite the popularity of Mongolian tents over wall tents, there still exist some inconveniences in setting up the Mongolian tent, in which the canvas must be spread out, and a number of poles have to be linked or assembled to form a frame. The frame is then attached and fixed to the canvas. The frame with the canvas covers is then subsequently erected to form the tent. The entire procedure, however, requires two persons to work in cooperation.

Summary of the Invention

[0003] The objective of the invention is to simplify the process for setting up a tent, in which the whole structure can be immediately set up by pulling a thin rope attached to the tent. According to the present invention, the structure of the tent is both collapsible and unitary; the canvas covers remain attached to assembled poles which need not be taken apart when the tent is stored. Much time is conserved since no assembly is required to set up the tent. To raise the tent, one has only to pull a rope located at the top of the tent. The entire operation is quite simple. To collapse the tent, one has only to pull apart two elements of the structure, and the tent will immediately. After the tent is wrapped up, it is ready to be bagged for storage. Since the tent can be densely compressed, it will not occupy much space.

[0004] Although a Mongolian tent is light enough to be carried, the present invention is an improvement in that it has simplified the processes of setting-up, closing, wrapping and bagging. Hence, this invention not only saves time, but requires only one person to set up and close, thus enhancing the portability of the tent.

Brief Description of Drawings

[0005]

Fig. 1 shows the entire structure of the tent in erected condition according to the disclosure of the present invention;

Fig. 2 shows the details marked by X according to Fig. 1;

Fig. 3 shows the details marked by Y according to Fig. 1;

Fig. 4 shows the details of the main frame of the tent in the folded condition, wherein the interconnection of all the elements are illustrated;

Fig. 5 shows the individual components of the primary structure of the tent; and

Fig. 6 shows the frame of the tent in the folded condition.

Detailed Description of Preferred Embodiment

[0006] The preferred embodiment of the tent according to the present invention is described with the accompanying drawings.

[0007] Fig. 1 shows the tent with four sets of poles in the erected condition. The tent is primarily comprised of a hub 11, a cap 12, collars 131-136, poles 141-143, a rope 21 and canvas 3. One may refer to Fig. 2 and Fig. 3 for detailed illustrations of the frame 2 as indicated by X and Y in Fig. 1, and may refer to Fig. 4 and Fig. 5 for the details of the main frame and the individual components of the structure wherein one end of a first collar 131 is pivotally connected to a lug 113 and forms a joint A, the other end thereof is close-fitted to a first pole 141, the first pole 141 can either extend through a second collar 132, or is divided into two separate sections, each is inserted into either end of and are close-fitted with the second collar 132. One end of a fifth collar 135 is connected with the remaining end of a first pole 141. The fifth collar 135 is pivotally connected with a sixth collar 136, and the sixth collar 136 is outwardly rotatable in the range of 0 ° to near 180 ° with respect to the status shown in Fig. 3. The other end of the sixth collar 136 is connected with a third pole 143. The inner side of the second collar 132 is provided with a lug 1321, which is further pivotally connected with a fourth collar 134 at one end and forms a joint C thereon. The other end of the fourth collar 134 is connected with a second pole 142, and the other end of the second pole 142 is connected with a third collar 133. The third collar 133 is further pivotally connected with a lug 123, and forms a joint B. The poles described above form the main structure of the tent, and are made of flexible material. For the sake of

building a robust light-weight structure with, the poles are made in the shape of pipes. The canvas which covers the structure of the tent is provided with loops 151, 152, 153, 154, 161 to properly bind the canvas on the frames of the tent.

[0008] To collapse the tent, the hub 11 is forced apart from the cap 12, and the structure will subsequently fold to the status as shown in Fig. 4; Fig. 5 shows the individual components before the assembly. Fig. 6 shows the frame in the collapsed state (the canvas is not shown). To set up the tent, one only has to pull the rope 21 along the direction indicated by the arrow. Since the end of the rope 21 is tied in a knot, it is prevented from passing through the bore of the cap 12. The cap 12 may be thus pulled until the top 121 of the cap 12 is inserted into the bore in the center of the hub 11, as shown in Fig. 2. At this point, the canvas bound on the frame of the tent is opened with the frame itself, and the tent appears in a state shown in Fig. 1. In this embodiment, the top 121 of the cap 12 can be in the shape of a dome for ease of insertion into the hub 11. Moreover, as shown in Fig. 2, the angle formed by the line connecting joint B and joint A, and the line connecting joint B and joint C is slightly greater than 90 ° ; in such a condition, the top 121 of cap 12 will insert into the bore of the hub 11, thus the structure of the tent will remain in a developed and steady state.

[0009] The embodiment of the present invention recited herein are merely intended to be explanatory and those skilled in the art will be able to make numerous variations and modifications to it without departing from the spirit of the present invention. All such variations and modifications are intended to be within the scope of the present invention as defined by the claims appended hereto.

[0010] In summary, the tent structure comprises a cap 12 having a plurality of poles 141 articulately coupled thereto and extending therefrom. Each pole 141 is articulately coupled to a member 142 which in turn is articulately coupled to a hub 11. The hub 11 and cap 12 are aligned along a central axis of the tent framework, and the position of hub 11 relative to the cap 12 depends upon whether the tent structure is erected or collapsed. The hub 11 is moved in an axial direction into engagement with the cap 12 when erecting the tent structure by pulling rope 21 through the cap 12. When erected, the tent framework has a substantially pyramidal shape with the cap 12 at its apex; the poles 141 are braced outwardly from the central axis by the members 142. When collapsed, the tent framework has an elongate shape with the poles 141 substantially parallel to the central axis.

Claims

1. A structure of an easy setup tent which is comprised of:

a hub being hollow in the center, and being provided with a plurality of lugs;
a cap having a top portion and a pad in the lower portion, said top portion being insertable in the hollow center of said hub, the pad of said cap being provided with lugs corresponding to the lugs of said hub;
a frame comprising:

a first pole;
a second pole;
a third pole;
a first collar, one end of which being pivotally connected with a lug of said hub, and the other end of which being connected with one end of a first pole;
a second collar, one end of which being connected with the other end of the first pole, said first pole extending through said second collar, the inner side of said second collar being provided with a lug;
a third collar, one end of which being pivotally connected with a lug of said cap to form a joint B, and the other end of which being connected with said second pole;
a fourth collar, one end of which being connected with said second pole, the other end of which being pivotally connected with said lug of said second collar to form a joint C;
a fifth collar, one end of which being connected with the other end of said first pole;
a sixth collar, one end of which being pivotally connected with said fifth collar, and the other end of which being connected with said third pole;

a rope with one end fixable on said cap, and with the other end being free and extending through the hollow center of said hub.

2. A structure of an easy setup tent according to Claim 1, wherein the top of said cap is in the shape of a dome.

3. A structure of an easy setup tent according to Claim 1, wherein the center of the cap is hollow, and one end of said rope being insertable through the cap, but the other end being made with a larger diameter or tied in a knot so that the rope is not allowed to pass completely through the cap.

4. A structure of an easy setup tent according to Claim 1, wherein the hub is provided with four lugs.

5. A structure of an easy setup tent according to Claim 1, wherein the first pole, the second pole and third pole are slender and cylindrical in shape, and are

preferably hollow in the center.

6. A structure of an easy setup tent according to Claim 1, wherein the angle formed between the line connecting joint A and joint B, and the line connecting B and joint C is greater than 90 ° .

7. A structure of an easy setup tent according to Claim 1, wherein the rotatable range of said sixth collar being 0 ° to 180 ° formed between said fifth collar and said sixth collar.

8. A structure of an easy setup tent according to Claim 1, further comprised of a canvas wherein a suitable number of loop shapes being formed for securing the structure of the tent.

9. A collapsible tent structure comprising:

a cap positioned on a central axis of the tent structure;
a hub which is movable in an axial direction towards the cap when erecting the tent structure;
a plurality of poles, articulately coupled to the cap, for defining the sides of the tent structure when erected; and
a plurality of members, paired with the poles, for supporting the poles when the tent structure is erected, each member being articulately coupled at one end to the hub and articulately coupled at the other end to its respective pole;

wherein the articulated couplings are such that the angle between each pole and member pairing is acute when the tent structure is erected and obtuse when the tent structure is collapsed.

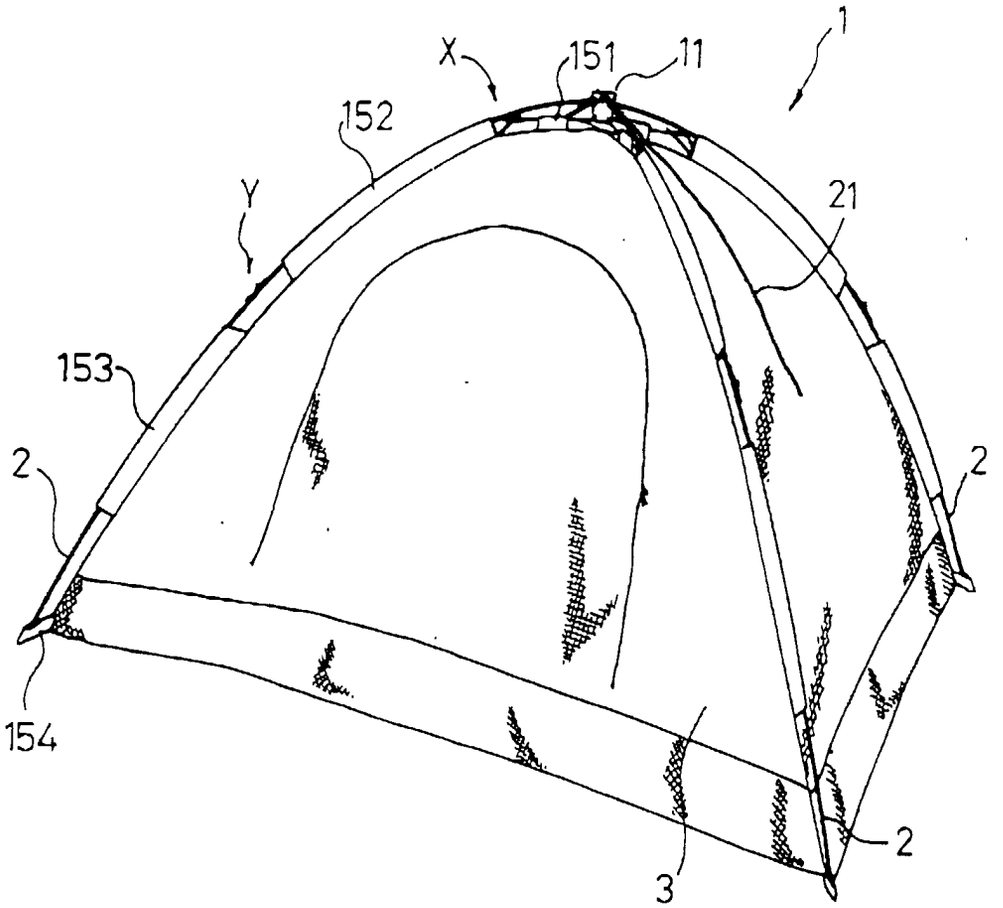


FIG. 1

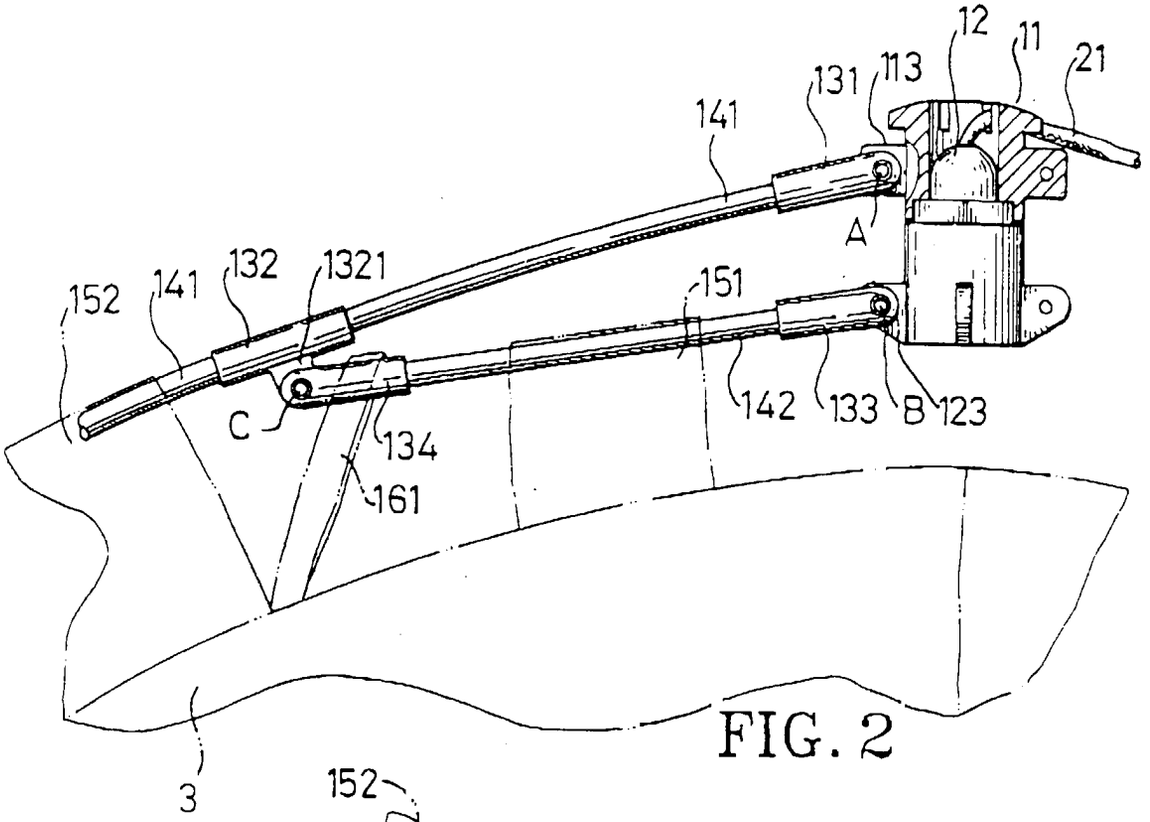

12
11
21
131
113
141
A
152
141
132
1321
151
C
134
161
142
133
B
123
3

FIG. 2

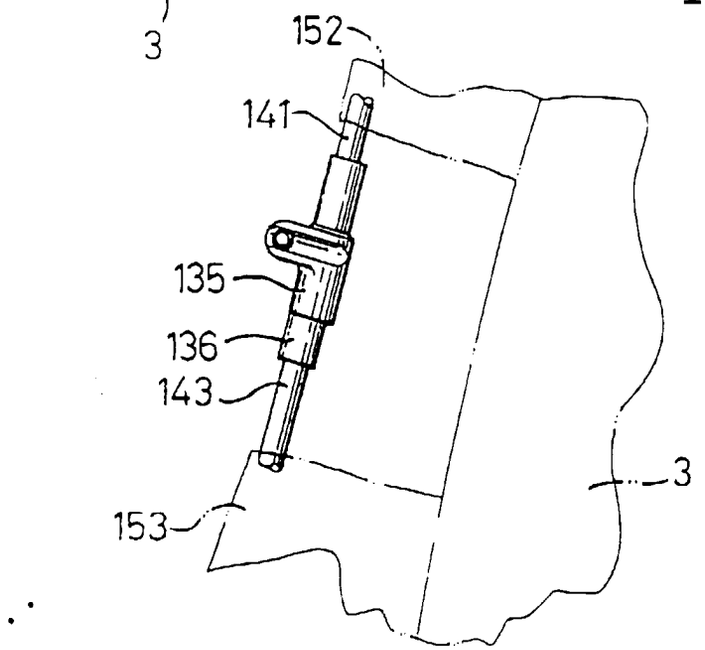
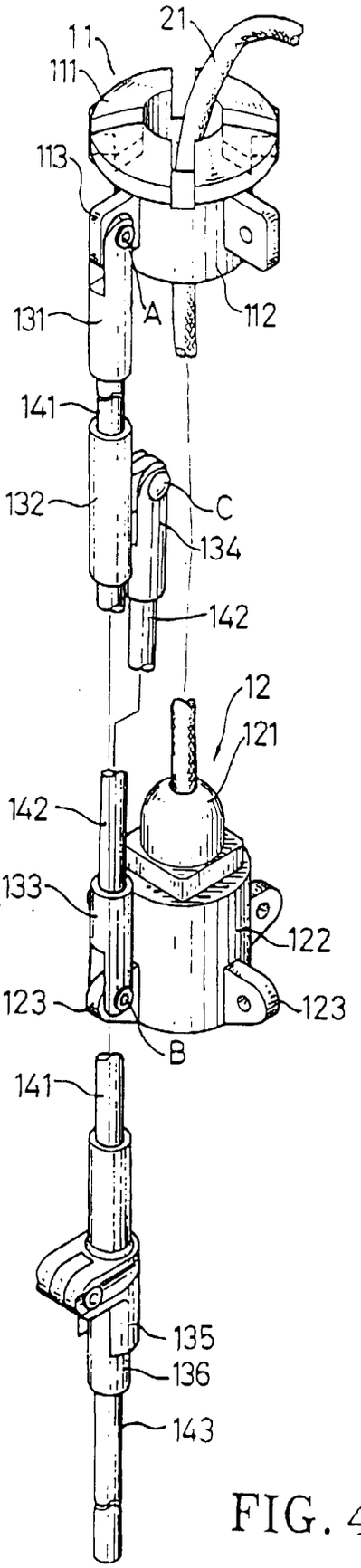

152
141
135
136
143
153
3

FIG. 3


11
21
111
113
131
A
112
141
132
C
134
142
12
121
142
133
122
123
123
B
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135
136
143

FIG. 4

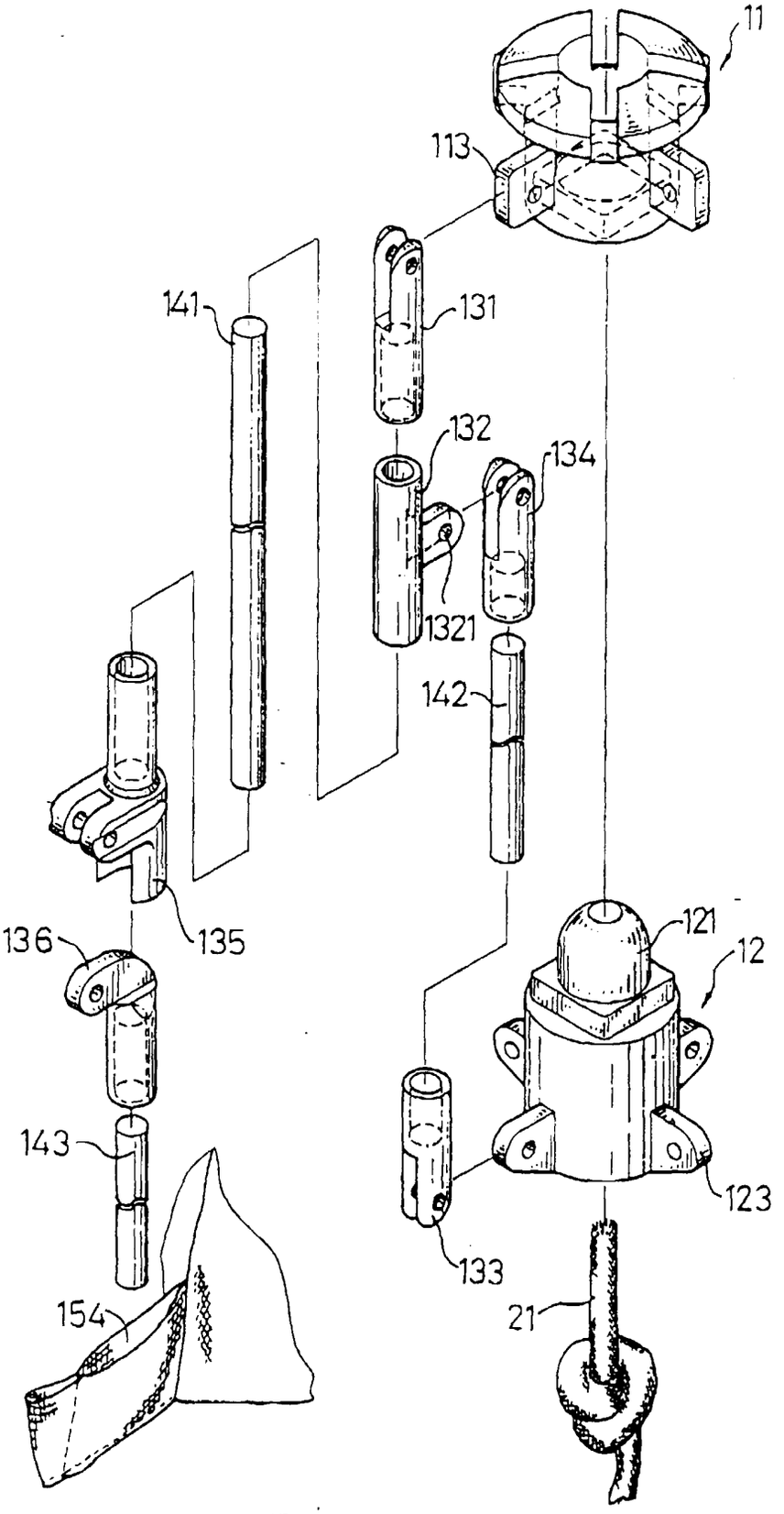

FIG. 5

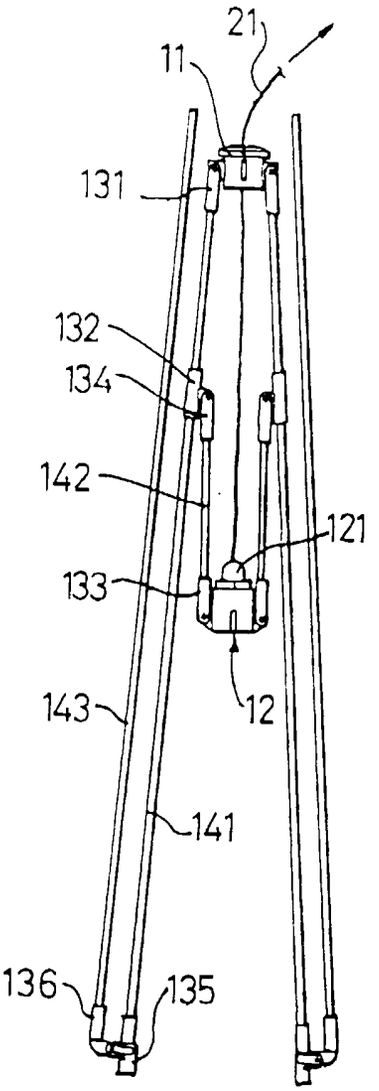

FIG. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 7533

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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Y		1,3-8	
A		2	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18 January 2000	Delzor, F

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