

June 3, 1969

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TENT POLE ASSEMBLY OR THE LIKE

Filed April 10, 1967

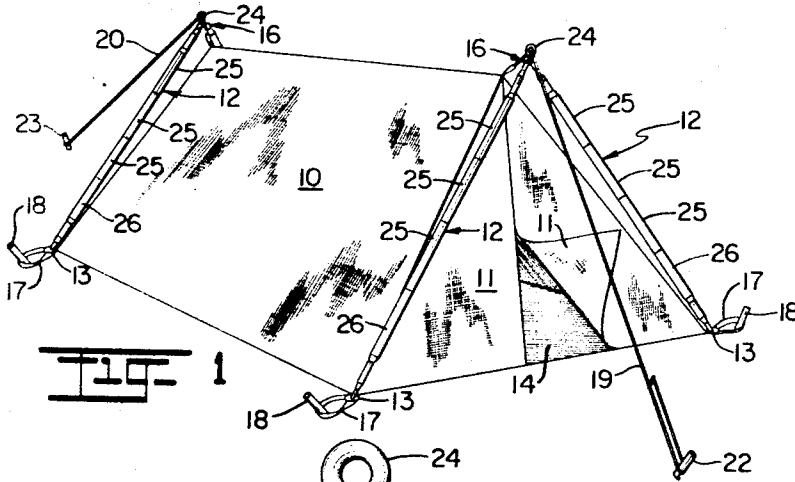


FIG. 1

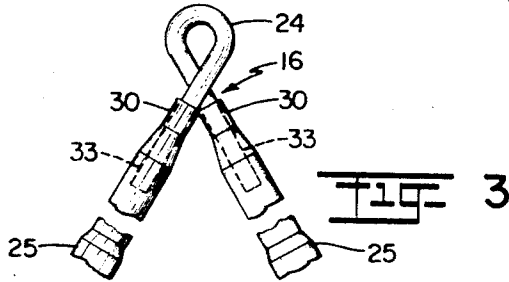


FIG. 3

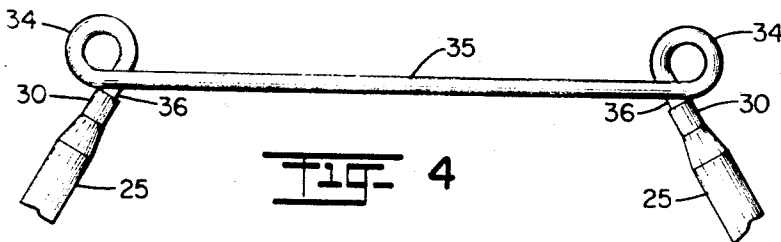


FIG. 4

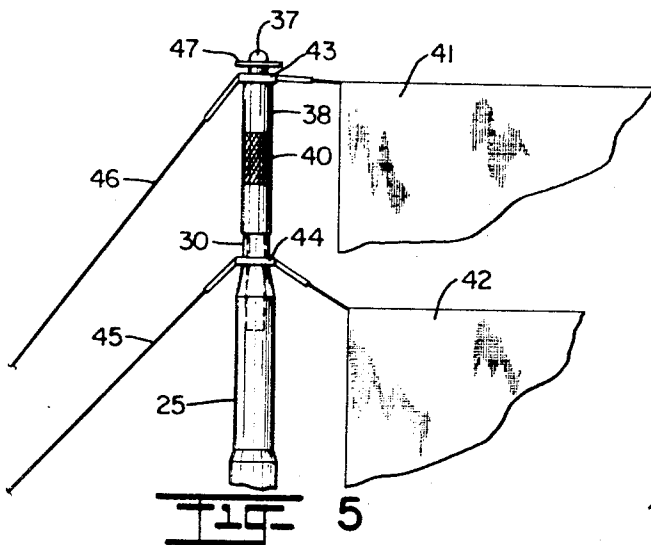


FIG. 5

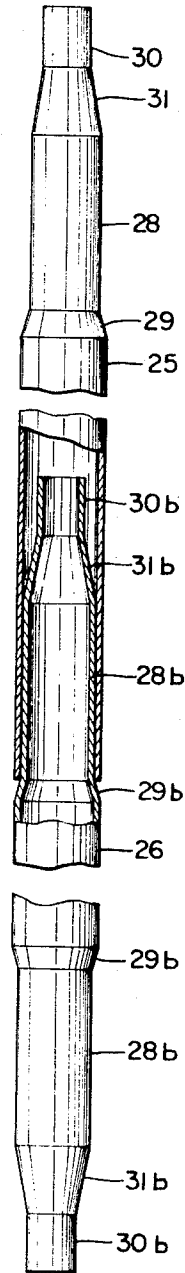


FIG. 2

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## TENT POLE ASSEMBLY OR THE LIKE

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Filed Apr. 10, 1967, Ser. No. 629,552

Int. Cl. A45f 1/16, 1/18

U.S. Cl. 135—15

7 Claims

### ABSTRACT OF THE DISCLOSURE

A readily portable tent pole or similar supporting member is constructed of a plurality of interfitting tubular sections. Each section has an end portion of reduced diameter which fits closely in the adjacent tube and has a further reduced portion which affords the securing of grommets or fittings to the pole; the bottom section has both its ends of this construction. Various fittings are employed with the pole assemblies without drilling or other modification of the tube sections.

This invention relates to tent poles and the like and particularly to an improved tent pole assembly of the multiple section type suitable for packing in a small space.

Tent poles and similar elongated support members have been provided heretofore which comprised sections with interfitting ends and ferrules and which have made it possible to store the poles in a relatively small space. These have included tubular pole members having drawn or reduced end portions to provide the interfitting feature. It is an object of the present invention to provide an improved tent pole assembly or the like which may be packed in a small space and which is readily assembled and also provides easy attaching means for tent parts or fittings.

It is another object of this invention to provide an improved tent pole assembly of the sectional tubular type.

Briefly, in carrying out the objects of this invention in one embodiment thereof, a tent pole assembly is constructed of strong light tubular material such as aluminum alloy tubing. The pole assembly comprises a plurality of sections each having an end portion having two stages or portions of reduced diameter, the larger portion having a diameter essentially the same as the internal diameter of the tube and the smaller comprising an extension of the first providing a reduced portion and shoulder for securing grommets or the like for attaching a tent to the assembled pole. The bottom section has both ends of the same reduced configuration. The doubly or successively reduced end portions facilitate the assembly of the pole as well as providing the tube joint and the ready attachment of tent parts or pole fittings.

The features of novelty which characterize this invention are pointed out with particularity in the claims annexed to and forming a part of this specification. The invention itself, however, both as to its organization and manner of use, together with further objects and advantages thereof, will be best understood upon reference to the following description taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of a tent employing pole assemblies embodying the invention;

FIG. 2 is an enlarged side elevation view, partly in section and partly broken away, illustrating the construction of the two lower sections of the pole assembly of FIG. 1;

FIG. 3 is an enlarged side elevation view of the top portion of one of the sets of two poles illustrated in FIG. 1 showing the connecting fitting;

FIG. 4 is a side elevation view similar to FIG. 3 showing a modified form of connecting fitting; and

FIG. 5 is a side elevation view of a portion of a tent and tent fly assembly illustrating the upper end of a pole assembly embodying the invention employing a tent fly extension.

Referring now to the drawing, FIG. 1 illustrates a tent 10 having door flaps 11 for closing one end and erected with poles 12 arranged in two angular V or sloping pairs. The poles fit in grommets 13 which are secured at the corners of the tent in alinement with a floor cloth indicated at 14 and are connected together by angle fittings 16 at the tops of the pairs. The corner grommets are provided in corner loops 17 attached to the tent and which are secured to the ground by stakes 18. The tent is maintained in its erected position by front and rear ropes 19 and 20, respectively, which are attached to front and rear stakes 22 and 23. The ropes 20 pass through loops 24 in the fittings 16 and thence downwardly to the tent to which they are secured in any suitable manner.

The tent poles 12 are constructed of a plurality of sections and as illustrated comprise three sections 25 of identical construction and a bottom section 26. The sections 25 and 26 are so constructed that they may easily be assembled and require no additional attaching elements. They provide a rigid pole which may be taken down in sections and carried in a small space such as that within a pack to be carried on the camper's back.

The details of construction of the sections 25 and 26 are illustrated in FIG. 2 which shows the bottom section 26 and the lowest section 25 in their position when assembled in the pole. The sections are constructed of a strong lightweight metal such as a rigid and tough aluminum alloy and are made from tubular stock. The upper end of the section 25 is reduced by swaging to provide a reduced portion 28 of a diameter slightly less than the internal diameter of the tube and connected to the main body of the tube by a tapered or conical portion 29. The portion 28 is further reduced to provide a cylindrical portion 30 connected to the portion 28 by a tapered or conical portion 31.

The section 26 is provided with reduced portions at both ends which are of the same configuration as the reduced portions of the section 25, and the reduced portions of the section 26 have been designated by the same numerals as those of the section 25 with the suffix letter "b."

When the tent pole is assembled, a section 25 is assembled on the bottom section 26 as indicated in FIG. 2 and successive sections are added to provide the required length of pole, for example the pole 12 of FIG. 1 which requires three sections 25 as illustrated. Each section 25 fits closely about the portion 28 of the section above it, the lowermost section 25 fitting closely about the portion 28b of the section 26, the lowermost ends of the successive sections being wedged somewhat and held securely on the tapered portions 29 and 29b.

During assembly the reduced size of the portions 30 and 31 makes it very easy to align and assemble the successive sections, the portions 30 fitting easily into the open ends of the successive tubes.

The short reduced portions 30 provide a substantial length of cylindrical tube which acts as a seat for fittings to be employed such as the fitting 16 and further acts as a holding section for grommets such as the grommets 13 of the tent corners illustrated in FIG. 1. This construction of the reduced portions affords ready assembly of the tent poles into one another and makes it possible to employ various fittings as illustrated, for example, by the use of the angle pieces 16 which, as shown in FIG. 3, include the loops 24 and shanks 33 which fit within the reduced

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portions 30 of the sections 25 and extend a substantial distance into the tubing. The loop 24 is formed so that the two shanks 30 touch each other and constitute stop members for limiting the position of insertion of the shanks into the tube ends.

Another form of fitting for use with the poles is illustrated in FIG. 4 and comprises a rod bent to provide two loops 34 which touch each other in the same manner as the sides of the loop 24 in FIG. 3 and are connected by a crossbar 35. Each of the loops 34 terminates in a shank 36 which may be inserted in the upper ends 30 of the sections 25 as illustrated. This fitting thus provides an arrangement for securing a tent of the type having a flat roof portion.

FIG. 5 illustrates another fitting for use with the sections of the pole assembly and which comprises a rod 37 on which a closely fitting tube 38 has been secured by a press fit produced by knurling 40. The rod 37 extends a substantial distance into the reduced portion 30 of the section 25 and constitutes a spacing member which may be employed, for example, for holding a tent fly 41 in spaced relationship to a tent 42, the fly 41 being connected to a grommet 43 placed over the top end of the rod 37 and resting on the sleeve 38 and the tent being secured to a grommet 44 secured on the reduced portion 30. Stay lines or ropes 45 and 46 are provided for the tent and fly, respectively, and are connected to the grommets 44 and 43. A stop is provided to prevent lifting of the grommet 43 from the rod 37 and comprises a flat spring or snapping 47 seated in an annular groove (not shown) formed in the top of the rod 37.

The construction of the sections is simple and provides a strong rigid pole assembly. The swaging operation results in a strong end section providing the double function of securing the rod sections to one another and providing an attaching element for the parts of a tent assembly.

For purposes of illustration and not by way of limitation, one ten pole assembly embodying the invention was constructed from  $\frac{3}{8}$  inch aluminum alloy tubing, the initial length of which was 14 inches, which after swaging in the manner shown in FIG. 2 provided a section 14 $\frac{1}{4}$  inches long having a reduced portion of about 2 $\frac{5}{8}$  inches in length, the portion indicated by 28 in the drawing being 1 $\frac{1}{2}$  inches long, the portion 30 being  $\frac{1}{2}$  inch long, and the portions 29 and 31 about  $\frac{3}{16}$  and  $\frac{1}{2}$  inches long, respectively, along their slopes. The tubing had a wall thickness of approximately  $\frac{1}{32}$  inch, the reduced portion 28 an outside diameter of about  $\frac{9}{16}$  inch, and the portion 30 an outside diameter of about  $\frac{5}{16}$  inch. The rods for forming the fittings of FIGS. 3, 4 and 5 were  $\frac{1}{4}$  inch aluminum alloy rods. A tent pole assembly constructed in this manner was found highly satisfactory in use and provided a readily portable and easily assembled rigid tent pole.

#### I claim:

1. A tent structure comprising walls and means including a rigid take down pole for holding the walls in stretched configuration, said pole comprising a plurality of straight tubular sections, each having one end reduced in diameter in two steps, the first of said steps comprising a first cylindrical portion having a diameter to fit closely the internal walls of the tubing at the open end of the adjacent section and the second step comprising a second cylindrical portion of substantially smaller diameter, and two tapered wall portions the first extending between said first and second steps and the second between the outside tubular wall and said first step, the length of said first

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cylindrical portion being sufficient to provide firm engagement of the assembled sections, said means including a ring-like element connected to said walls and having a hole slightly larger than said second cylindrical portion for engaging said second cylindrical portion and a line for utilizing said pole to stretch said walls and retain said element in position on said second cylindrical portion and seated against said second tapered wall portion.

2. A tent structure as set forth in claim 1 wherein said means includes two of said rigid take down poles and said walls comprise two side wall portions sloping away from a common ridge, said side walls having two of said elements attached at opposite positions to the respective bottoms of said side wall portions, each of said poles having one of said sections with both ends reduced in diameter in like manner, said poles sloping in general alinement with said side walls, and a fitting having shanks positioned at the angle of said poles and detachably seated within the respective ones of said second cylindrical sections at the top of said poles, said second cylindrical section at the bottom of said poles being fitted in respective ones of said ring-like elements, and means connecting said fitting and said ridge for stretching said walls of said tent.

3. A tent structure as set forth in claim 2 wherein said fitting comprises a loop of round metal rod having said shanks formed thereof and projecting therefrom.

4. A tent structure as set forth in claim 2 wherein said ridge comprises a flat portion spacing the tops of said sloping walls and said fitting comprises a round metal rod bent to provide two loops spaced apart about the width of said flat portion and said shanks extend from respective ones of said loops.

5. A tent structure as set forth in claim 1 wherein said pole is positioned upright and said ring-like element is connected to the top of the walls of said tent, a fly for said tent, and means including an extension piece seated on said second cylindrical section for holding said fly in spaced relationship to the walls of said tent.

6. A rigid take down pole for tents and the like comprising a plurality of separate straight sections constructed from tubing of the same diameter, each section having one end reduced in diameter in two steps, the first step comprising a cylindrical portion having a diameter to fit closely the internal wall of an unreduced tube section and a relatively short length of at least about twice the diameter of said tubing, the second step comprising a cylindrical portion of substantially reduced diameter and a length substantially less than that of the first cylindrical portion whereby the reduced end of one section is readily fitted into the opposite end of an adjacent section, said second cylindrical portion at one end of said pole constituting means for attaching an element of a tent or the like to the pole.

7. A rigid take down pole as set forth in claim 6 wherein both ends of one of said sections of said pole are formed in the same reduced stepped configuration whereby both ends of said pole terminate with respective ones of said second cylindrical portions both constituting attaching means.

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