TENT FLY ASSEMBLY AND POLE SUPPORT COMBINATION


Filed Apr. 9, 1970, Ser. No. 26,914

Int. Cl. A45I 1/14

U.S. Cl. 135—1 R

ABSTRACT OF THE DISCLOSURE

A tent fly in the form of a protective cover of sheet material dimensioned to overlie the roof of the tent is provided with novel supporting and tensioning means to mount the fly in taut condition spaced from the roof of the tent, thereby permitting circulation of air beneath the protective tent roof. The fly includes at least one canopy portion which projects outwardly from an end of the tent. Support means is also provided for the canopy portions, which facilitates its extension and tensioning.

BACKGROUND AND SUMMARY

The use of protective covers or so-called "tent flys" for the roofs of tents provides desirable advantages for the users of the tents. The tent flys can be made of completely water impervious material, such as plastic or plasticized fabrics, without interfering with the "breathing" action of the tent. This is possible because the tent fly is spaced upwardly above the roof of the tent, permitting air to circulate between the tent fly and the tent roof. Not only does the use of a tent fly provide greater weather protection, especially against rain and snow, but it also tends to keep the interior of the tent cooler than it otherwise would be. The roof of the tent is protected against the direct sun, and the air circulation between the tent fly and the tent roof reduces the heating up of the interior of the tent, which otherwise would occur. Further, the tent flys can be provided with canopy portions which can extend outward over the ends of the tent or over the doors protecting the ventilation openings, windows, and doors from rain and direct sunlight. This can permit the weather closures for the windows or doors to be left at least partially open during a rainstorm. The occupants of the tent can thereby continue to receive air ventilation even though it is raining. Another advantage is that the ventilation openings can be left open during the daytime when the tent is unoccupied without fear that a sudden rain storm will wet the interior of the tent.

Heretofore the principal problem with the use of tent flys is that tent roofs are not ordinarily adapted for the mounting or support of tent flys. The tent fly in position must resist the effects of wind and rain, and yet be readily dismountable. Also, the use of the tent fly must not unduly complicate the erection of the tent. The present invention for the first time provides a simple and adequate solution to these problems.

The tent fly assembly of this invention is particularly advantageous when used with tents employing the erection and support system described in Kirkham Pat. 3,371,671. As shown in that patent, the ridge pole extends underneath the centerline of the roof. As will subsequently be described in detail, for the purpose of the present invention, it is preferred that the ridge pole be outside and above the centerline of the roof. Further, as shown in the cited patent, the end support rods or cross-bars have outer ends provided with eyes which connect to hooks at the corners of the tent roof. For purposes of the present invention, it has been found preferable to have the outer ends of the cross-bars unattached to the tent, and adapted for engagement with the corners of the tent fly, as will subsequently be explained in detail.

With the upright end poles on the outside of the ends of the tent, as shown in the above-cited patent, the canopy support and tensioning assembly can be utilized for canopy portions extending from one or both ends of the tent fly. By a mechanical arrangement which will subsequently be described, the canopy portions can be extended and tensioned, being supported in cantilever fashion, while being stable in use and yet readily dismountable. The mechanical features and advantages of the tent fly assembly and pole and support combination for use therewith will be described in the following detailed specification.

THE DRAWINGS

This invention is shown in an illustrative embodiment in the accompanying drawings, in which—

FIG. 1 is a perspective view of a tent utilizing the tent fly and support combination of the present invention;  
FIG. 2 is a perspective view of the tent of FIG. 1 with the tent fly and support assembly removed;  
FIG. 3 is a fragmentary sectional elevational view taken on line 3—3 of FIG. 1;  
FIG. 4 is a broken-away elevational view of the upright pole, canopy support assembly, and ridge pole shown in FIG. 3;  
FIGS. 5, 6, and 7 are fragmentary elevational views of the canopy support assembly, the sequence of views illustrating the manner in which the assembly can be inserted in and utilized to tension the canopy;  
FIG. 8 is a fragmentary detail view illustrating one of the corner pockets of the tent fly;  
FIG. 9 is a fragmentary detail sectional view illustrating the insertion of one of the ends of the cross-bar into the pocket of FIG. 8;  
FIG. 10 is a fragmentary top view of the connection between the upright pole, the ridge pole, and the cross-bar, taken on line 10—10 of FIG. 5;  
FIG. 11 is a fragmentary sectional view of the sleeve means and extension pole assembly for supporting the tent fly canopy, the section being taken on line 11—11 of FIG. 5; and  
FIG. 12 is a fragmentary elevational view of the upright pole and rod means, taken on line 12—12 of FIG. 5.

DETAILED SPECIFICATION

Looking first at FIG. 1, there is shown a tent T equipped with fly F having canopy extensions C. The tent is shown in FIG. 2 with the fly F removed. As there shown more clearly, the roof slopes downwardly on each side of a longitudinal centerline 10, the downwardly sloping portions of the roof being indicated by the number 11. The tent also includes side panels 12 which meet the sloping roof portions 11 along eave lines 13 generally parallel to the central or ridge line 10. End panels 14 connect with the side panels 12 at the four corners of the tent and with the roof at the ends of the sloping portions 11. All of the pitch of the roof is relatively flat, the end portions 14 can be considered as gabled ends, the top or the end panels meeting the roof in a gable. In the illustration given, the tent T has a screen-equipped door D and end windows W. The tent also provides a floor F as shown in FIG. 3. Around the perimeter of the base of the tent, there are provided a plurality of stake straps or loops L which receive the stakes S.

The pole support system for the tent T is similar to that disclosed in Kirkham Pat. 3,371,671. However, modifications have been made in the support system to better
adapt the tent for cooperation with the tent fly assembly, as will be described.

As disclosed in U.S. Pat. 3,737,671, sleeve means 15 are provided along the junctures between the tops of end panels 14 and the sloping roof portions 11. As shown, the sleeve means 15 are divided into two sections and extend downwardly on each side of the centerline 10. The inner end portions of the sleeve means 15 are open as well as their outer end portions. Downdrawn bellow resilient rod means 16 are received within the sleeves 15, as indicated in FIG. 2, and described more clearly in said patent. Pat. 3,737,671. Rod means 16 can be made in two sections, respectively inarticulate in each of the sleeve sections, and means provided for holding the inner ends of the rods, as also described in said patent. In the illustration given and preferably, the outer ends of the rod means 16 project beyond the sleeve means 15, the ends of rod 16 can be provided with protective domes 17, as shown more clearly in FIG. 12. Ridge pole means 18 extends along the central roofline 10. While ridge pole 18 can be used beneath the roof, as described in Pat. 3,737,671, it is preferred to have it positioned above and spaced from the roof center 10 as indicated in FIGS. 2 and 3. Ridge pole 18 may be made in two sections, or be made in one and extendable, or be made to include a hinged-type joint as described in Pat. 3,737,671. Ridge pole 18 extends between the rod means 16 and holds the rod means in longitudinally spaced relation.

Upright pole means 19 extends downwardly from the central portions of the rod means 16 along the outsides of the end panels 14 to engage the ground and support the broad means and the ridge pole means 18 at an elevation above the ground. The one means of connecting these members is shown in FIGS. 5, 10 and 12. The outer ends of the ridge pole means 18 are provided with a T-fitting 20 having transverse tube portions 21 and a socket portion 22 receiving the ends of pole 18. The transverse tube portions 21 receive the inner ends of the rod sections 16, as shown more clearly in FIGS. 10 and 12. A bore hole 23 extends vertically through socket 22 for receiving a pin 24 extending upwardly from the upper end of the upright pole 19 as shown in FIG. 4, fitting 20 provides a cylindrical stud 25 which extends into the ends of the tube members forming the ridge pole 18, and is staked thereto as indicated at 26.

The upright end poles 19 can be formed in two sections, or made adjustable in length, but this is not essential. As indicated in FIG. 4, the lower ends of the poles 19 can be provided with cup-shaped protectors 27, or alternatively the ends of the poles can be left open, and they can be positioned over the top of a stake 8. These details, however, are not directly related to the present invention.

The tent fly F is in the form of a protective cover of sheet material, which is preferably water-imperious. For example, fly F can be formed of a weather resistant plastic, or of a plasticized or rubberized fabric. It will be understood that the roof portions 11 as well as the sides 12 and ends 14 of the tent F will be formed of a canvas duck, which is water repellent but which permits the passage of air and water vapor therethrough. A desirable plastic material for forming the fly F is vinyl coated nylon.

In the illustration given, the protective cover or fly F provides downwardly sloping portions 29 on each side of a longitudinal centerline 30. The sections 29 together form a generally rectangular sheet which is dimensioned to overlie the tent roof, or more specifically the roof sections 11. Preferably the outer corners of the cover sections 29 overlie the outer corresponding corners of roof section 11. The sections 29 are therefore adjacent the rod means 17.

At the corners 31 of the cover portions 29 there are provided pocket means 32 indicated generally at 32 in FIG. 8, for receiving the rod ends 17 as shown more clearly in FIGS. 8 and 9, the pocket-providing means can consist of a lower triangular member 33 and an outer triangular member 34, the inner member being somewhat longer than the outer member, as shown in FIG. 8. The members 33 and 34 can be stitched along their outer edges to the corners 31 of the cover panels 29 as indicated at 35 in FIG. 8. A pocket with an opening 36 is thereby provided, as shown more clearly in FIG. 9. The end 17 of the rod section 16 can thereby be readily inserted in the pockets thus formed, the insertion being indicated by the arrow in FIG. 9.

To obtain maximum advantage from the fly F, the sections 29 should be taut when the corners 31 are stretched over the ends of rods 16. The center 31 of the fly F can rest on the ridge pole 18, as shown in FIG. 3, leaving an air circulation space or gap, as indicated at 37. In practice, it has been found that the fly F can be positioned on top of the roof of the tent with the tent in collapsed condition on the ground. Before the tent is raised, and the rod means 16 are flexed, the pockets 32 can readily be placed over the ends 17 of the rods, and the panels 29 of the fly F will automatically be raised and tensioned as the tent is erected, for example, by the method described in Pat. 3,737,671.

At least one, and preferably two of the canopy portions C are provided by the fly F. In erect condition, as shown in FIG. 1, the canopy portion C slopes downwardly with an attachment flange means 41, which as shown in FIG. 6 extends outwardly beyond the upper portion of the end panels 14, and overlies at least the upper portions of the windows W. As shown and preferably, the canopies C are generally triangular, and have their bases 38 adjacent the rod means 16 and the sleeves 15. Preferably, as indicated more clearly in FIG. 3, the base portions 38 of the canopies rest on and are supported by the sleeves 15 and the rods 16. Since the sleeves 15 with the rods 16 therein project upwardly above the adjacent portions of the roof panel 11, and the fly F is stretched taut between the rod outer ends 17, the fly portions 29 are held above and out of contact with the corresponding roof portions 11. This permits the air to circulate across the roof of the tent beneath the fly F.

Extension pole means indicated generally at 39 in FIG. 3 are provided beneath the canopy portions C for supporting the canopy portions in extended condition. The pole means 39 have their inner ends supportably connected to the upper portions of the adjacent pole means 19 and their outer ends detachably engaged with the outer ends of the canopies. As shown more clearly in FIG. 4, the extension pole means 39 is connected to the upright pole 19 by sleeve means 40 slidable on the pole 19, for example, between the upper position indicated in solid lines in FIG. 3 and the lower position indicated in dotted lines. Sleeve means 40 is provided with an attachment flange means 41, which as shown in FIG. 11 can consist of two spaced tabs 41a and 41b. The rod 42 forming the extension pole means 39 has its inner end received between the tabs 41a and 41b, and is pivotally connected thereto by a bolt and nut assembly 43 (see FIG. 11). As will be noted, the pivot axis provided by the bolt and nut assembly 43 is generally horizontal and is generally transverse to the axis of pole 19. This arrangement permits the rod 42 to be pivoted or swung to a vertical arc, for example, from the position indicated in dotted lines in FIG. 3 to the position indicated in solid lines.

Preferably flange means 41 in the inner end of pole means 39 provides complementary locking members for releasably holding the pole means at a downward inclination with the canopy portions in extended condition, as indicated in solid lines in FIG. 3. In the illustration given, the inner end portion of rod 42 adjacent the outer end of flange 41 is provided with a laterally extending pin 44, which is engageable with slots 45 on seating on the top edge of the extension 46. It will be understood that both of the tabs 41a and 41b are symmetrical and that the bolt provides the slots 45 and the extensions 46. To permit the projecting ends of pin 44 to be moved in and out of the slots 45, the bolt assembly 43 is received in slots 47 generally aligned with the slots 45.
Here again it will be understood that each of the tab portions 41a and 41b provide the slots 47. Preferably as shown, the canopy portions C are triangularly shaped bases 38 and extending outwardly and upwardly from the apex portions 48 forming the outer ends of the canopies. These apex portions 48 are provided with pocket means indicated generally at 49 in FIG. 3, which are formed in the same manner as the pocket means 32 (see FIG. 8). To provide for smoother insertion of the rod 42 in the pocket 49 and to protect the pocket from damage by the rod end, the rod end of the rod can be provided with a dome protector 50, as shown in FIGS. 3 and 4.

Reference may now be had to FIGS. 5 to 7 for an understanding of how the canopy pole support combination of this invention can be utilized to tension the canopies C. In these figures, the canopies are indicated diagrammatically by a broken line. After the tent has been erected with the tent fly attached to the rod end 17, the canopy C can be readily positioned and tensioned by the method illustrated in FIGS. 5 to 7. First, sleeve 40 is moved downwardly a short distance on the pole 19, as shown in FIG. 5. The rod 42 is inclined upwardly, thereby shortening the distance of the rod end 50 from the top of the pole 19 and facilitating the insertion of the rod end 50 in the pocket 49 at the apex 48 of the canopy C. Then, as illustrated in FIG. 6, rod 42 can be pivoted downwardly by hand while sleeve 50 is moved upwardly on pole 19. The completion of the process is shown in FIG. 7. The ends of the latching pin 44 have been seated on the top of tab extensions 46 and slid into the locking slots 45, thereby holding the rod 42 at a downward inclination. The sleeve 40 is moved upwardly to the very top of pole 19, and is in contact with the underside of the connector 20, thereby limiting further upward movement of sleeve 40. The canopy C is taut, and the tension therein tends to hold pin ends 44 in the slots 45, thereby providing a secure cantilever-type support for the canopy with the upper surface of the canopy inclining downwardly, as illustrated more completely in FIGS. 1 and 3.

When it is desired to release the canopies, a different procedure can be followed. First, the tent fly is disengaged at all four corners from the rod end 17, that is, the pockets 32 are pulled outwardly until they are released from the rod ends. Then the rods 42 are swung sidewardly rather than upwardly, releasing the tension on the canopies C, and permitting the pockets 47 to be readily disengaged from the supports 42. It will be noted that the sleeves 40 are rotatable on the poles 19, and that this facilitates the side swinging of the supports 42 to disengage the supports from the canopies. With the construction described, it is not necessary to provide any means for locking sleeve 40 to rod 19, the sleeve remaining slidable and rotatable on the pole at all times. When the canopies are in taut condition, as shown in FIGS. 1 and 3, and the sleeve 20 is at its upwardmost position against the connector 20, the balance of forces is such that the flys C are stable, even under substantial wind or rain forces.

We claim:

1. In combination with a tent including a roof providing portions sloping downwardly from a longitudinally central line, side panels meeting said sloping roof portions along eave lines generally parallel to said central line, end panels connecting said side panels and said roof portions, respectively, extending from the junctures between the tops of said end panel and said roof portions, downwardly bowed resilient rod means received in said sleeve means, the ends of said rod means at the four corners of said roof projecting outwardly beyond said sleeve means, ridge pole means extending along said central roof line between said rod means to hold said rod means in longitudinally spaced relation, and upright pole means extending downwardly from the central portions of said rod means along the outsides of said end panels to engage the ground and support said rod means and said ridge pole means at an elevation thereabove, a tent fly assembly comprising:

(a) a protective cover of sheet material having a central portion dimensioned to overlie the roof of said tent with corner portions adjacent said rod means ends;
(b) pocket means provided at said cover corner portions for receiving said rod ends to support and hold said cover over tent roof in spaced relation thereto;
(c) a canopy portion provided by said cover at least at one end thereof for extending outwardly beyond said rod means and beyond at least the upper portion of the adjacent tent end panel; and
(d) extension pole means beneath said canopy portion for supporting said canopy portion in extended condition, said pole means having its inner end supportably connected to the upper portion of the adjacent upright pole means and its outer end detachably engaged with the outer ends of said canopy portions.

2. The combination of claim 1 in which said ridge pole means is on the outside of said roof and at least the central portion is spaced upwardly from the centerline portion of said roof, and said cover rests on said ridge pole means in engagement with said rod ends, whereby air can circulate across the roof of said tent beneath said cover.

3. The combination of claim 2 in which said rod means projects upwardly above the adjacent portions of said roof, and said cover also rests on said rod means so that the end portions of said cover are also spaced upwardly from said cover, said cover being stretched taut over said ridge pole means and said rod means by said corner pocket means in engagement with said rod ends, whereby the tautness of said canopy portion by said pole means is facilitated.

4. The combination of claim 1 in which said extension pole means is connected to said upright pole by sleeve means slidable thereon, said sleeve means having attachment flange around, and the inner end of said extension pole means being pivotally connected to said extension flange means for pivoting about a line transverse to the longitudinal axis of said upright pole, whereby the tautening of said canopy portion by said pole means is facilitated.

5. The combination of claim 4 in which said flange means and said pole means inner end provide complementary locking members for releasably holding said pole means at a downward inclination with said canopy portion in tensioned condition.

6. The combination of claim 1 in which said cover provides said canopy portions at both ends of said tent and said extension pole means are provided to cooperate with the upright pole means at both ends of said tent, said canopy portions being generally triangular with the apex portions forming the outer ends thereof, said apex portions providing pocket means for receiving the outer ends of said pole means.

7. In combination with a tent having a supported roof with four corners, roof-supporting rod means running along the end portions of said roof and having end portions at said four corners, and upright support pole means extending along the outside of the ends of said tent to the level of said roof, a tent fly assembly comprising:

(a) a protective cover of sheet material having a central portion dimensioned to overlie the roof of said tent with corner portions adjacent said rod means;
(b) pocket means provided at said cover corner portions receiving said rod ends to support and hold said cover over said tent roof;
(c) a canopy portion provided by said cover at least at one end thereof for extending outwardly beyond the adjacent end of said tent; and
(d) extension pole means beneath said canopy portion for supporting said canopy portion in an extended condition, said pole means having its inner end means...
supportingly connected to the upper portion of the adjacent upright pole and its outer end detachably engaged with the outer portion of said canopy portion.

8. The combination of claim 7 in which said extension pole means is connected to said upright pole by sleeve means slidably thereon, said sleeve means having attachment flange means and the inner end of said extension pole means being pivotally connected to said extension flange means for pivoting about a line transverse to the longitudinal axis of said upright pole, said flange means and said pole means inner end providing complementary locking members for releasably holding said pole means at a downward inclination with said canopy portion in tensioned condition.

References Cited
United States Patents

PETER M. CAUN, Primary Examiner